

Staff Reference Manual Noncommunity Water Supply Program



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

This manual has been designed for use by EGLE and LHD staff in the state of Michigan. The goal of this manual is to provide reference to the NCWS program policies and procedures.

This manual is a living document and may be updated between full revisions. Access to the cloud storage site is recommended for all local health departments. The current cloud storage site is in a Microsoft Team. Please email your EGLE representative for access.

This manual presents a summary of regulations applicable to noncommunity drinking water systems. Should the summarized information in this document be inconsistent with a governing rule or statute, the language of the rule or statute shall prevail.

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Acronyms

AL	Action Level
ALE	Action Level Exceedance
ARI	Adverse Resource Impact
AVB	Atmospheric Vacuum Breaker
BCA	Bilateral Compliance Agreement
BW	Bottled Water
CAP	Corrective Action Plan
CEC	Continuing Education Credit
DCVA	Double Check Valve Assembly
DCVAV	Double Check Valve with Intermediate Atmospheric Vent
DBP	Disinfection Byproducts
DSMI	Distribution System Materials Inventory
DWV	Drinking Water Viewer
EGLE	Michigan Department of Environment, Great Lakes, and Energy
ETT	Enforcement Targeting Tool
FTP	File Transfer Protocol
FY	Fiscal Year
GEC	Global Environmental Consultants
GPD	Gallons per Day
GPM	Gallons per Minute
GWUDI	Ground Water Under the Direct Influence of Surface Water
HAA5	Haloacetic Acid
HBVB	Hose Bib Vacuum Breaker
ID	Identification
IOC	Inorganic Chemicals
LHD	Local Health Department
LQW	Large Quantity Withdrawal
LUST	Leaking Underground Storage Tank
L1	Level 1 Assessment
L2	Level 2 Assessment
MCL	Maximum Contaminant Level
MDARD	Michigan Department of Agriculture and Rural Development
MiEHDWIS	Michigan Environmental Health and Drinking Water Information System
MG/L	Milligrams per Liter
ML	Milliliter
MOR	Monthly Operation Report
MPR	Minimum Program Requirement
MR	Monitoring and Reporting
MRDL	Maximum Residual Disinfectant Level
NCWS	Noncommunity Water Supply
NCWSS	Noncommunity Water Supply System
ND	Non Detect or Not Detect
NILQW	New or Increased Large Quantity Withdrawal
NTNC	Nontransient Noncommunity
ODWMA	Office of Drinking Water and Municipal Assistance
OIC	Operator in Charge
PFAS	Per- and Polyfluoroalkyl Substances
PN	Public Notice
POE	Point of Entry
POS	Positive
POU	Point of Use
PPB	Parts Per Billion
PPM	Parts Per Million
PPT	Parts Per Trillion

PSI	Pounds per Square Inch
PVB	Pressure Vacuum Breaker
PWS	Public Water Supply
PWSID	Public Water Supply Identification Number
PWSS	Public Water Supply System
RAA	Running Annual Average
RO	Reverse Osmosis
RPZ	Reduced Pressure Zone
RTCR	Revised Total Coliform Rule
SD	Significant Deficiency
SDWA	Safe Drinking Water Act, 1976 PA 399
SDWIS	State Drinking Water Information System
SOC	Synthetic Organic Chemical
SSP	Sample Siting Plan
SSR	Site Specific Review
SWA	Source Water Assessment
SWP	Source Water Protection
SWIFT	Safe Water Information Field Tool
TCR	Total Coliform Rule
TT	Treatment Technique
TTHM	Total Trihalomethanes
USEPA	United States Environmental Protection Agency
VFD	Variable Frequency Drive
VN	Violation Notice
VOC	Volatile Organic Chemical
WQP	Water Quality Parameter
WSSN	Water Supply Serial Number
WT	WaterTrack
WWAT	Water Withdrawal Assessment Tool

Chapter 1

Program Overview and The Safe Drinking Water Act

Michigan is home to over 9,000 noncommunity water supply systems (NCWS). Most noncommunity water supplies (NCWS) serve different individuals per day (transient) such as restaurants, motels, resorts, highway rest stops, and parks. However, some serve the same individuals on a regular basis (nontransient) such as schools, child day care centers and places of employment.

The NCWS program involves the Department of Environment, Great Lakes, and Energy (EGLE), along with local health departments (LHD) staff working with NCWS owners and operators to facilitate compliance with the Michigan Safe Drinking Water Act, 1976 PA 399, and Administrative Rules, as amended (SDWA). This includes routinely inspecting existing NCWS, issuing well construction permits for new or expanded NCWS, ensuring water sampling is done at required frequencies and other steps to protect public health and return NCWS to compliance when violations of the drinking water standards occur.

Over the years, the principles of multiple barrier protection have become the foundation of Michigan's drinking water programs. The primary barriers to prevent contamination and protect public health are proper location, construction, operation, and maintenance of sources and water systems, supported by periodic monitoring to measure the ongoing integrity of the NCWS.

There are numerous elements to each of these barriers that essentially make up the drinking water program. The elements include training and licensing of water well drillers and pump installers, strict construction codes for all water well location and construction, plan review and permitting of new construction or alteration of a public water supply (PWS), training and certification of operators, source water assessments, cross connection control, water treatment where applicable, and regular sanitary survey inspections.

Ongoing sampling is required for all NCWS. This monitoring is very important. However, periodic monitoring is not a substitute for the multiple barriers (e.g., a properly located, constructed, and operated water system) since exposure to contaminants will have already occurred by the time results from routine samples are known. Similarly, treatment to remove or inactivate contaminants with public health implications is also not a substitute for a safe source. Continuous removal of contaminants that impact public health requires significant technical and operational expertise and regulatory oversight. In principal treatment is a last resort, especially for small water systems, and is far less protective of public health than relying on a source that is not contaminated.

Part 127 of [Act 368 of 1978 Public Health Code](#), as amended and rules is known as the [Michigan Water Well Construction and Pump Installation Code](#). These regulations in conjunction with the SDWA are the legal basis of regulation of water supplies in Michigan. The Groundwater Quality Control Rules provide for the licensing of water well drilling and pump installers, and regulate materials, construction, grouting procedures, abandonment, and numerous other aspects for all water wells in Michigan. The SDWA builds on that foundation and is the authority for additional requirements for public water supplies.

1.0 Federal Safe Drinking Water Act

The Federal Safe Drinking Water Act of 1974 (PL 93-523) was passed by Congress giving the United States Environmental Protection Agency (USEPA) the responsibility for establishment and enforcement of public drinking water standards nationwide. In a primacy agreement, the USEPA has delegated the authority to administer and enforce the Federal PL 93-523 Act requirements to the State of Michigan. The enactment of the Michigan SDWA allows EGLE to assume primary enforcement authority and responsibility for a comprehensive public water supply (NCWS) program in Michigan.

The Federal PL 93-523 undergoes reauthorization by Congress every 10 years. Since its initial passage, Congress has instituted new drinking water standards, monitoring, inspection, notification, and operational requirements. Each time Congress passes new standards, Michigan must update the SDWA to incorporate the changes or enact equivalent standards. This is necessary to retain primacy.

The SDWA defines a public water supply system. All facilities meeting the definition of a NCWS are required to meet the legal requirements of the SDWA as it is implemented in Michigan.

“A waterworks system which provides water for drinking or household purposes to persons other than the supplier of water and does not include either of the following:

- i. A waterworks system that supplies water to only one living unit.*
- ii. A waterworks system that consists solely of customer site piping.”*

In Michigan, SDWA Rule 502 further classifies NCWSS into three types. [Chapter 3](#) of this manual gives a detailed description of all three types of public water supplies.

Delegation of Authority

Since 1976, USEPA has annually received a Congressional appropriation under section 1443(a) of PL 93-523 to assist states, territories, and tribes in carrying out their NCWS Supervision programs. Designated state agencies that have been delegated Primary Enforcement Responsibility (primacy) for the NCWS Supervision Program are eligible to receive grants.

Through Michigan’s primacy authority, EGLE has contracted with LHDs to maintain a Type II NCWS program in each health department and the City of Detroit. EGLE NCWS Program Staff support this local effort through training, technical support, and program evaluation.

1.1 USEPA

The USEPA provides grants to help eligible states, territories, and tribes develop and implement a NCWS program adequate to enforce the requirements of PL 93-523 and ensure that PWS comply with the National Primary Drinking Water Regulations. Key activities carried out in a PWS program include:

- developing and maintaining state drinking water regulations;
- developing and maintaining an inventory of NCWS throughout the state;
- developing and maintaining a database to hold compliance information on NCWS;
- conducting sanitary surveys of NCWS;
- reviewing NCWS plans and specifications;
- providing technical assistance to managers and operators of NCWS;
- carrying out a program to ensure that the NCWS regularly inform their consumers about the quality of the water that they are providing;
- certification of laboratories that can perform the analysis of drinking water that will be used to determine compliance with the regulations;
- carrying out an enforcement program to ensure that the NCWS comply with all the state’s requirements.

Most of the funding for conducting the NCWS program in Michigan comes from the USEPA grants. Annual fees received from active NCWS help cover costs of the program and are disbursed back to the LHD.

The USEPA is in contact with EGLE on a regular basis. This includes reviewing quarterly data that EGLE electronically sends to USEPA regarding violations, providing EGLE with a list of NCWS targeted for enforcement (Enforcement Targeting Tool commonly known as ETT), and setting goals for EGLE.

Additionally, USEPA will audit EGLE’s drinking water program to make sure that we are implementing the SDWA per their intent. The USEPA also controls grant money to the states and can withhold grant funding if they are not satisfied with a state’s program.

1.2 Michigan SDWA

The SDWA is divided into [Statutes](#) and [Administrative Rules](#). A statute is a law passed by the legislative authority that governs the city, state, or country. An administrative rule, more properly called a regulation, is a directive adopted by the executive branch of the government. Rules or regulations have the force and effect of laws. Regulations fill in the details of statutes that are written in a general way.

1.3 Additional Information

The public can be directed to NCWS information via the Internet where they will find basic information, laws & rules, and related links. The regulations that affect NCWS can be accessed through EGLE NCWS website or at the USEPA website.

[Noncommunity Unit Site](http://michigan.gov/noncommunitywatersupply) (michigan.gov/noncommunitywatersupply)

[Operator Training & Certification Unit](http://michigan.gov/egleoperatortraining) (michigan.gov/egleoperatortraining)

[Rules of the Federal Safe Drinking Water Act \(40 CFR 141 through 149\)](#)

[USEPA SDWIS Search](http://epa.gov/enviro/sdwis-search) (epa.gov/enviro/sdwis-search)

Shared Documents

Various documents developed by EGLE NCWS Program for LHD use may be found using a MS Teams site. Please email EGLE to become a member of the MS Team for Noncommunity Coordinators.

1.4 EGLE NCWS Program Staff

EGLE NCWS staff is in Lansing and throughout the state. The primary direct service providers to NCWS owners and operators are the LHD staff located in each county or local health department. EGLE works closely with LHD staff and NCWS owners to maintain safe drinking water supplies.

The map is available on the EGLE Noncommunity Website: [Noncommunity Water Supply Staff Area Assignments](#).

EGLE staff assignments are found on each EGLE program's website.

Chapter 2

Local Health Department Contracts and Annual Evaluation

There are many individuals and organizations that have a role in public drinking water protection in the State of Michigan. The owner of a NCWS is responsible for meeting all of the legal requirements that apply to their water supply with respect to the SDWA. EGLE and LHDs work together to make sure that safe drinking water is provided to NCWS users and that all regulatory requirements are met.

2.0 LHD Role via Contract

Under contract with EGLE, LHD staff provide NCWS program oversight for required water quality monitoring and reporting in accordance. Of the utmost importance is that the LHD take prompt action to protect public health and pursue compliance with applicable construction, public notice, and water quality standards when an inspection establishes that sewage, surface water, chemicals, or other serious contamination can gain entrance into the water system or there is a confirmed MCL violation. The LHD will also monitor the NCWS sampling to ensure that repeat samples are collected promptly where initial sample results indicate a potential violation of state drinking water standards, or where the sample analyses are deemed unreliable.

Contracts between the LHDs and EGLE are paid from the State's NCWS fee program.

The contract requires that the local entity performs the following services:

- Conduct sanitary survey inspections
- Review and issue well permits
- Coordinate communication with assigned EGLE staff
- Provide program oversight for water quality monitoring and reporting
- Notify owners of water supply deficiencies and other issues
- Conduct water system inspections as needed
- Consult with EGLE on different NCWS issues
- Take prompt action to protect the public health and pursue regulatory compliance
- Complete capacity development applications (new nontransients only)
- Respond in writing to requests for deviations from suppliers of water, as necessary
- Provide technical assistance to NCWS owners and operators
- Maintain appropriate program records and inventory database

2.1 Contract Payment

Reimbursement to the LHD is based upon an approved funding formula applied to the inventory of active NCWS in the geographical area served by the LHD. Additionally, LHDs are reimbursed for additional activities within the program. For example, the additional regulatory site visits at systems that utilize treatment for public health purposes are reimbursed activities.

The contract is on a fiscal year basis (Oct 1 through Sept 30). Quarterly payments following the end of December, March, June, and September will be made by EGLE upon receipt of each properly completed quarterly report from the Grantee. Support for payment is based upon the Grantee's satisfactory progress in fulfilling its responsibilities under the contracted agreement. The process is described in [section 9.1](#) of this document.

2.2 Program Evaluations

EGLE NCWS program staff conducts an annual evaluation of each designated LHD to determine if the LHD is fulfilling its responsibilities under the contract using MPRs and indicators. The evaluation involves an office review component of inventory maintenance and LHD files relating to the program, and a field review component.

There are four (4) minimum program requirements (MPRs) with indicators that must be satisfactorily met each fiscal year.

MPR 1

The local health departments shall maintain a current inventory and file of all noncommunity public water supplies within its jurisdiction and submit revisions to the department quarterly.

- a. Evidence of accuracy by comparing the noncommunity inventory with lists of licensed facilities (i.e., food service, campground, DSS, migrant labor camps, hospitals, grocery stores, food processing plants, schools, state/federal facilities, etc.), meeting the definition of noncommunity water systems and facilities invoiced for the annual fee.
- b. Documentation of submittal of inventory data, from existing and newly constructed noncommunity facilities.
- c. Evidence and records indicating the use of water supply serial numbers on all noncommunity documents. Documents including: well records, well permits, deviations, sanitary surveys, water sample results, compliance violation, and enforcement records, and associated notes and correspondence are easily identified, readily available.

MPR 2

The local health departments shall provide notification, oversight, and enforcement of all required construction, water quality monitoring and treatment for public health purposes at noncommunity public water supplies.

- a. Procedure in place to track required routine, repeat, and special water quality monitoring, and results.
- b. Evidence and correspondence indicating owners are notified of routine, repeat, and special monitoring requirements. Documentation indicating prompt action is taken when routine samples are not collected or where initial sample results indicate potential violation of state drinking water standards or where sample analyses are unreliable due to overgrowth, excessive transit time, or where the presence of organic chemical contamination is indicated.
- c. Documentation of violation notices of required monitoring, maximum contaminant level (MCL) violations, or the occurrence of unregulated compounds provided to the owner and the department in a timely manner. Notices of violation include the contaminant, public health effects information, specify precautionary measures, and public notice requirements where applicable. Appropriate enforcement action is taken and documented.

MPR 3

The local health departments shall take prompt action to protect the public health and pursue compliance with applicable public or private notice and water quality standards, when it is determined that sewage, surface water, chemicals, or other serious contamination can gain entrance into the ground water or a water supply, or there is a confirmed maximum contaminant level violation.

- a. Correspondence and records including sanitary surveys, inspection reports, water sample results, violation and enforcement documents indicating condition were appropriately identified, acted upon, and followed-up.
- b. Documentation including notification of owner of monitoring requirements, notices of violation of construction and drinking water standards, precautionary measures, and public notice requirements are readily available.

MPR 4

The local health department shall complete a sanitary survey on each noncommunity water supply at the frequency specified in the act and shall issue permits for new noncommunity water supply wells as required in the act. The surveys and permits shall be completed as outlined in the Noncommunity Water Supply Program Manual.

- a. Evidence supporting completion of surveys including sanitary survey log records, scheduling of surveys and re-inspections, inventory updates, and related correspondence.
- b. Documentation, records, and correspondence including complete sanitary survey reports, appropriate water sample results, well records, notification to owner of compliance status, appropriate future monitoring requirements, and correction action, violation, and enforcement information, where applicable.

- c. Evidence and procedures supporting receipt of well permit applications, timely application review, issuance of permits and final inspection, including well permit and water sample tracking logs or records.
- d. Documentation, and correspondence including properly reviewed, issued, and inspected well permits, deviations, appropriate water sample analysis, owner notification, timely submittal, and review of well records, and approval of completed systems prior to use by the public. Records of violation and enforcement activities where applicable.

Information from quarterly violation records, inventory records, and program files are used to assess contract and MPR compliance. Files selected for review are chosen based on reported current activity in the particular program element, i.e., monitoring violation, MCL, sanitary survey, or well permit issuance.

Evaluations are conducted using an EGLE form to standardize the reports across the state. There are currently two types of evaluations: Standard and Self-Assessment. EGLE in consultation with the LHD will determine which type of evaluation is required for each LHD.

LHDs that do not meet all four MPRs will be required to submit a corrective action plan outlining steps the LHD will take to meet MPRs in the following fiscal year.

2.3 LHD Staff Turnover

The NCWS Program often has one LHD person to oversee the administrative portion of the program, and when LHD staffing changes occur there is potential for temporary interruption of program activities. The purpose of this section is to identify priority activities in the NCWS Program so that LHD managers can insure that basic public health issues are addressed during periods of staff transition. [Chapter 9](#) details the requirements of quarterly reporting to EGLE.

Priority Activities

Daily review of water sample results to ensure NCWS follow correct procedures to protect public health.

Weekly entry of lab samples into database. Staff should contact EGLE when results are above the MCL or AL for any contaminants.

When staff changes are anticipated, the LHD should notify EGLE NCWS representative as soon as possible. This will allow time to determine needs and plan for training and assistance. It is expected that the LHD will provide basic water supply public health training and impart institutional knowledge to their new staff. However, EGLE NCWS staff will be available to provide program specific assistance and work closely with management and new staff during transition to ensure basic public health protection is provided in the NCWS Program. The LHD is expected to contact EGLE when their assistance is needed.

The following is not intended to be an all-inclusive list or be a complete reference of all requirements. It simply summarizes the most common situations (in priority order) that occur and require continuous oversight.

1. Coliform positive (POS) sample result – three repeat distribution samples and one raw water sample from each well must be collected within 24 hours of receiving notification of a routine POS result. The NCWS must have a sample siting plan that defines specific sampling locations. One sample must be collected from the same tap where the original POS result originated and two additional samples from the distribution system. The rule specifies the repeat samples be collected within five service connections upstream and downstream of the routine location. Failure to collect all required repeat samples in distribution triggers a level 1 assessment. More information about coliform sampling can be found in [Chapter 6](#).
 - A triggered groundwater sample must be collected from the raw water tap of each well in operation. Failure to collect the sample at the raw water tap constitutes a Groundwater Rule Violation. A violation notice must be sent to the water system which includes a tier 3 public notice.
2. Nitrate or Nitrite MCL – the Nitrate MCL is 10 milligrams per liter (mg/L), and the Nitrite MCL is 1.0 mg/L. The combined Nitrate/Nitrite MCL is 10 mg/L.
 - A sample above the MCL requires a confirmation sample within 24 hours.

- Failure to collect a confirmation sample within 24 hours requires Tier 1 public notice (**Appendix G05**)
 - A violation occurs if the average of the two samples is above the MCL. (This is not a running annual average. One sample event above the MCL is a violation.)
 - An MCL violation requires Tier 1 public notice and an alternate water source until the problem is corrected.
3. Failure to Monitor (Acute Contaminants) – All NCWS are required to sample for coliform and nitrate. Each failure to sample is a violation of the SDWA that is required to be reported. Monitoring schedules can be found in SDWIS or Drinking Water Viewer.
- Public Notice (using mandatory language)
 - Samples must be collected
4. Sampling (chronic contaminants) – NTNCWS are also required to sample for contaminants that can have long term impacts on public health. However, if sample results for these chronic contaminants exceed drinking water standards or on rare occasion, reach extreme levels, follow up should be a priority. The list includes arsenic, lead and copper, cyanide, volatile and synthetic organic chemicals, PFAS and metals.

Noncommunity coordinators have developed calendars to assist them in knowing when to run certain reports and manage their work over the course of the year. An example calendar can be found in **Appendix I09**.

Chapter 3

Classification, Inventory and Annual Fees

Complete, updated, and accurate inventory information is critical to the NCWS Program. Inventory information is used by the NCWS Program for communicating with people about the water system, such as: sample monitoring, tracking of certified operators, billing, and compliance monitoring. This information is also incorporated into national drinking water databases and is made available to anyone who needs it on a regional or national level to respond to emergencies, make legislation, or carry out research.

3.0 Inventory Information

NCWS inventory information means all characteristics of a water system: system type (transient vs. nontransient), activity status, name, and address of specific contact persons, well data, population served, treatment information, etc. which describe how a NCWS operates, where it is located, and who is responsible.

Keep in mind that “providing water” means that water is used for any of the following purposes: drinking, food preparation, bathing, hand washing, showering, or brushing teeth. The Noncommunity Water Supplies Owners’ Guide (**Appendix C06**) may be used to help alert water supply owners of their responsibilities.

3.1 NCWS Classification

The SWDA classifies types of PWSs in Michigan as follows (see **Appendix C03** DWEHD-399-013 Classification of Public Water Supplies):

Type I – Community Water Supply

A PWS that provides year-round service to not fewer than 15 living units or which regularly provides year-round service to not fewer than 25 residents.

Type II – NCWS

A PWS that is not a community supply, but that has not fewer than 15 service connections or that serves not fewer than 25 individuals on an average daily basis for not less than 60 days per year. Type II water supplies are further classified based on their average daily water production for the maximum month. In general, Type IIa supplies use 20,000 gallons or more of water per day, and Type IIb supplies use less than 20,000 gallons of water per day. Type II PWS are not intended to serve year-round living units.

Type III – All Other PWS not meeting the definition of Type I or Type II.

Nontransient (NT) NCWS Definition:

A NCWS that serves not fewer than 25 of the same persons on an average daily basis for 6 months per year or more. This definition includes water supplies in places of employment, schools, day-care centers, bottled water sources. NTNCWS are further defined as those that provide water to 25 or more of the same persons 4 or more hours per day, for 4 or more days per week, for 26 or more weeks per year.

Transient NCWS Definition:

A NCWS that serves 25 or more different individuals a day at least 60 days of the year (or 15 or more service connections). Examples include motels, churches, golf courses, campgrounds, restaurants, parks & highway rest areas.

It is important correctly define average number of persons served per day. The average number of persons served in a day determines the classification and monitoring requirements.

Seasonal NCWS Definition:

A NCWS that is not operated as a public water supply on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

USEPA has further clarified the definition through a USEPA Memorandum of Understanding:

“Year-Round Resident”

an individual whose primary residence is served by the water system.

“Same Persons”

an individual who does not reside at a place served by the NCWS but has a regular opportunity to consume water produced by the NCWS.

“Regular Opportunity”

four or more hours per day, for four or more days per week, for 26 or more weeks per year.

The EGLE Classification Review Team is available for LHD staff to utilize when there is a question regarding the classification of a public water supply. Utilize the [Request for Water Supply Classification Review Form](#) to enlist the team to discuss Type 1 and Type 3 classifications.

3.2 The NCWS Classification Change Form

A water system can formally request, in writing, to have a change in classification. The “NCWS Classification Change” form can be used to report inventory changes (**Appendix C02**). This form may be kept in the file and the information shall be updated in SDWIS. If the reclassification results in a change in monitoring frequencies, **Appendix C02.1**, the classification change approved letter should be sent to the water system and filed.

3.3 Annual Fee

In accordance with R. 325.1011b, Sec. 11b (1) of the SDWA, all active NCWS are assessed an annual fee, and the amount is based on the classification type. Invoices are sent to the billing address of all active NCWS each October. Information sent to the NCWS billing address can be found on the [Noncommunity Annual Fees website](#).

Benefit to NCWS

The fees collected are used to help provide the funding to enable EGLE to contract with LHDs to perform the required activities. Retaining state and local control of the program may help to save the NCWS owner considerable time, effort and/or money by:

Allowing more flexibility in implementation of certain rules, including reduction of some sampling requirements. For example, under Federal regulations, a NTNCWS would have to take at least one volatile organic chemicals (VOC) water sample every quarter, at considerable expense to the owner. Michigan may allow a reduction in that frequency to once every six years, provided the NCWS is not at risk for VOC contamination.

Fee Assessment

NTNCWS supplies pay three times the amount of transient supplies since they generally require more time by the LHD to conduct inspections, issue water well construction permits, and monitor the additional required sampling.

In August of each year, EGLE requests that the LHD ensure that the inventories in the database be up to date. This includes current billing addresses and active/inactive status. It is important that the LHDs have all the information correct to avoid any delay in payment of fees by NCWS. This greatly impacts the overall success of the program and ensures accurate payment back to LHDs each year.

SDWIS is used to generate data on the number of active water supplies and that information is used to calculate the annual fee and generate invoices.

The fee is assessed, and invoices mailed in October and November for that fiscal year, i.e., a fee imposed on a water supply on November 1, 2024, for Fiscal Year 2025.

The fee is calculated and adjusted each year by applying a percentage adjustment using the Detroit Consumer Price Index. In addition to the Consumer Price Index adjustment, at the end of the fiscal year, a percentage of any unspent fee revenue from previous annual fee payments is applied as a credit adjustment on a pro-rated basis to the fee the following year in accordance with the SDWA.

Any NCWS with five or more WSSN on the same property will receive a 25% discount on the annual fee. A designated field in SDWIS is used to identify this discount.

Fee Collection

The NCWS must pay the annual fee by November 30th each year. If it is not paid by then, a penalty fee of \$25 per month (billed quarterly) is applied to the outstanding balance.

All annual fees and any associated penalties are to be made payable to the “State of Michigan” at the address on the cover letter included with the invoice or customer billing statement. Additionally, payment can be made by credit card or echeck online. Refer any calls regarding the invoices to the email address listed on the documents, EGLE-NCOMFEES@Michigan.gov.

Delinquent Annual Fees

Failure to pay annual fees is a violation of the SDWA and may result in escalated enforcement.

An NCWS with delinquent fees should contact EGLE to discuss payment. EGLE may negotiate reductions for payment penalties.

NCWS Invoice Dispute

If a water system owner believes they do not owe the NCWS invoice, they are instructed to send the invoice back to EGLE Cashier’s Office along with a note stating any changes to its NCWS status and notify the LHD representative in writing to inform them of any change. Many will call EGLE directly. Either process may lead to EGLE contacting the LHD to verify the conditions of the dispute.

A dispute could be due to:

- connection to a community water supply
- the business closed and/or the water system status was not updated
- they believe that they no longer serve at least 25 people a day for 60+ days of the year (classification change)
- changed from a NTNCWS to a transient NCWS, or vice versa (classification change)
- a change in ownership
- billing address issues

When a LHD becomes aware of a new owner, or a classification change, an email from the LHD to EGLE explaining the situation will prompt an assessment of any outstanding charges. For instance, an outstanding balance accrued by a former owner may be written off. EGLE would follow up with these situations.

Some owners contact EGLE to dispute the late penalties assessed on the account. While the late penalties are explicitly stated in the SDWA statute, EGLE will listen to the dispute and may negotiate in accordance with EGLE policy on NCWS annual fees.

Undeliverable

If a water systems invoice is returned to the Lansing business office, a SDWIS Admin will mark in SDWIS that the financial contact needs to be updated.

3.4 Maintaining the NCWS Inventory

The purpose of the NCWS inventory is to locate, classify, and maintain in the electronic database, records of all NCWS in Michigan which meet the definition of a NCWS.

Assigning a WSSN or PWSID

Each NCWS is identified with a specific WSSN that is assigned to the supply. The WSSN is a seven-digit number starting with 2 and ending with the two digit Michigan county code. The numbers are sequentially assigned as each new supply is added to the inventory. A WSSN can have more than one well source. EPA assigns a PWSID by using the WSSN and putting “MI” in front. (e.g., WSSN 2099999 is PWSID MI2099999)

Please note that previously assigned WSSNs are not to be reused. A new WSSN shall be assigned to a new supply. The existing WSSN should be used if the well is being replaced or the business changes names. Even if the replacement well is located 100 feet from the original location, the same WSSN is to be assigned because it is serving the same water system. The new well shall be given a new source facility ID.

If more than one well is being used at a location and it is not interconnected with other existing wells, but the individual well meets the definition of a NCWS it should be assigned a separate WSSN. A WSSN is not synonymous with a water supply or waterworks system. A single water supply can and may have multiple WSSN.

Rule 503 allows for the LHD to determine if all wells on a single property shall be regulated as noncommunity water supplies.

A waterworks system meeting the definition of a community or noncommunity water supply and a waterworks system not meeting the definition of community or noncommunity water supply in the same general location collectively owned or operated by the same person may be considered by the department to be a single public water supply.

A. Interconnected Wells

A NCWS may have several interconnected wells. Only one WSSN is assigned to the NCWS. Properly identify each well separately on the sanitary survey by location, name, and source facility ID. The identification of the wells in your electronic and paper records must match the water system's records.

B. Non-Interconnected Wells

When more than one well exists at the same location, properly identify each well in the paper inventory by using some identifying characteristic like direction, size, or location. The NCWS should be identified with multiple WSSN and multiple source facility IDs.

Assigning a source facility ID

Do not use characters (e.g., well #1). Instead, use two letters and three digits to identify the source facility (WL001). Do not reuse source facility IDs for replacement wells.

Wellogic

Wellogic water well records should be complete before the source is added to SDWIS. Information in Wellogic is not connected to SDWIS. Adding the Wellogic ID and the well GPS information will be part of the sanitary survey for any well source.

3.5 Adding a New NCWS to the Inventory

What Needs to Get Done at a New NCWS

A NCWS may be considered “new” for the following reasons:

1. It is a newly constructed NCWS water system.
2. Its use has changed, so that it now qualifies as a NCWS. (Reclassification)
3. It had never previously been identified as a NCWS. (Found system)

The water system owner should complete an Application to Install or Alter a Noncommunity Water Supply. This gives the LHD a starting point for the information that is required in SDWIS and begins the process of onboarding a new water system.

Depending on whether a NTNCWS was pre-existing or newly constructed, capacity development may be required. See the “Field Staff Checklist” below. An example letter is available as **Appendix C04**. A new NCWS should not be approved until all components of the sanitary survey are complete and the water system is in compliance with SDWA. This includes receipt of required documentation, and all water sample results.

3.5.1 Field Staff Checklist

New NCWS

- ☐ Review application
- ☐ Conduct initial sanitary survey site inspection. This includes a thorough NCWS inspection (source, treatment, distribution, etc.), determination of NCWS type and proper isolation distances for that classification.
- ☐ Collecting contact information, including a billing address where they receive mail in the fall and winter months.
- ☐ Obtain a well record and pump record and make sure it is entered into Wellogic and has an accurate well location in Wellogic. If requested, EGLE can expedite data entry into Wellogic for new NCWS wells.
- ☐ Collect or verify coliform bacteria sample(s) from distribution system.
- ☐ Collect or verify nitrate and nitrite samples from each entry point.
- ☐ Establish monitoring frequencies for all sources based on received water results.

- ☐ Create a sample siting plan.
- ☐ Assign a WSSN and source facility ID (default will be next available source starting WL001).
- ☐ Enter inventory information into SDWIS. (See SDWIS Desk Guide “Adding New Water System”)
- ☐ Send sanitary survey letter to owner.

Additional requirements for NTNCWS

- ☐ Obtain appropriate sample collection bottles for the NCWS. (Organics, inorganics, PFAS, metals, etc.) Sample results shall be reviewed before setting monitoring frequencies.
- ☐ Complete Lead & Copper form (**Appendix F70**), including selection of lead and copper sample sites. The first set of lead and copper distribution samples should be required immediately following the NCWS being approved for use.
- ☐ Deliver Capacity Development forms for the NCWS owner to complete before the NCWS is approved. A certified operator shall be identified prior to approval.
- ☐ Distribution System Material Inventory (DMSI) Certification Form (**Appendix F70.1**)

The new NCWS shall not be approved for use until all required water samples have been received and show a safe water source.

3.6 Electronic Inventory

Safe Drinking Water Information System (SDWIS) is a federal reporting database. Data management plays a critical role in helping states and EPA protect public health. SDWIS keeps tracks of NCWS monitoring requirements, water sampling results, and violations.

There are supporting applications that are used in conjunction with SDWIS to help states and LHD's, these include Safe Water Information Field Tool (SWIFT), Drinking Water Viewer (DWV) and ReCap Reports.

SWIFT Surveys allows LHD staff to download inventory information from SDWIS to a computer, tablet or phone and complete survey questions in the field and upload the information into SDWIS.

DWV allows LHD staff and the public to easily and quickly view certain information from SDWIS including sample results, inventory information, sample schedules, and violations. DWV is customized by the State to allow different levels of user viewable information.

ReCap Reports is used to fill the gaps of DWV. There are existing queries built by EGLE or you can filter and create your own report. These can be downloaded into Excel or as PDFs.

Chapter 4

Sanitary Survey and Cross Connections

An accurate and complete sanitary survey is an essential component of the NCWS program. The sanitary survey information is needed to determine the overall compliance and maintenance required to ensure the provision of safe drinking water to the public.

4.0 Sanitary Survey Definition

A sanitary survey is a thorough review of the water sources, facilities, sampling history, equipment operation, financial security, and maintenance of NCWS for the purpose of ensuring that safe drinking water is provided.

Sanitary surveys provide an opportunity for inspectors to establish a field presence with the owners and operators of NCWS in order to educate them about proper monitoring and sampling procedures, provide technical assistance, and inform them of any upcoming changes in regulations. NCWS found to be in compliance with applicable rules at the time of the sanitary survey may receive a reduction in certain required monitoring at the discretion of the department. Likewise, problems found during the sanitary survey may require increased monitoring until the concern is corrected.

LHDs or EGLE staff conduct sanitary surveys to evaluate NCWS for proper construction, operation, and maintenance. The sanitary survey letter provides notification to the supply owner about the status of compliance or noncompliance with the SDWA. The written notification includes a description of any deficient item(s), outlines the corrective action, and establishes a specific compliance schedule for making corrections. To ensure that all violations have been corrected, re-inspections are required within ten (10) days of the expiration date of the compliance schedule. When re-inspections are completed, documentation of the results shall be provided to the owner.

4.1 Sanitary Survey Frequency

Sanitary surveys are required for all NCWS by the Ground Water Rule or the Surface Water Treatment Rule as applicable. A sanitary survey for NCWS must be completed at least once every 5 years. Paperwork and data entry for the field visit is expected to be completed within 45 days of the site visit.

4.2 Elements of a Sanitary Survey

Part 8 of the SDWA indicates if the well was constructed before 1978 construction minimum standards do not apply unless one of the following:

1. Water quality does not meet MCLs.
2. The department determines the continued use of the well represents a health hazard.
3. A well is in violation of a previous rule of the department that was in effect at the time of construction.

EPA requires eight minimum elements to be reviewed in conducting a sanitary survey.

Section	Description
Source	Reviews a water source for the purposes of preventing potential contamination or water quality degradation. Including reviewing well record to determine source protection, verifying isolation to new or known contaminants, viewing physical components & condition of the well casing/cap/conduit piping.
Treatment	Identifies existing or potential sanitary risks by evaluating the design, operation, maintenance, and management of water treatment plants.
Distribution System	Reviews the design, operation, maintenance, and management of distribution systems to prevent contamination of the drinking water as it is delivered to customers.
Finished Water Storage	Reviews the design and major components of finished water storage facilities in order to prevent water quality problems from arising during storage.

Section	Description
Pumps	Reviews the design and use of water supply pumping facilities to determine overall reliability and identify potential sanitary risks. Submersible well pumps are reviewed as part of the source.
Monitoring & Reporting	Determines water system conformance with regulatory requirements through the review of water quality monitoring plans and system records; verifies data reported to the regulatory agency are consistent with system records. Include discussions of reporting requirements specifically for those systems that continually have issues submitting data on time.
Management & Operation	Evaluates water system performance in terms of management and operation, including its long-term viability in meeting water quality goals. Include discussions of reporting requirements specifically for those systems that continually have issues submitting data on time.
Operator Compliance	Ensures water systems have qualified professionals that meet all applicable operator certification requirements.

4.3 Basic Steps of a Sanitary Survey

There is no single “official” process for conducting the survey. If the eight elements listed above are covered, the order in which they are reviewed is not critical. The inspector needs to prepare before going onsite and must communicate their findings with the owner/operator. The “Field Check List” can be downloaded from SWIFT to be used as a field guide.

Before the survey at the office:

- ✓ Review documents (previous surveys, open violations, public notices, complaints, enforcement correspondence, well record, etc.). A SWIFT survey can be started at this point and some of the questions may be answered prior to the site visit while talking to the water supply owner on the phone.
- ✓ Contact the owner (explain purpose of survey, schedule appointment, inform of any needed documents). Unlike unannounced inspections, the sanitary survey should be scheduled, as you need to speak with owners/operators and get access to areas that may not always be accessible if the owner/operator is not available.
- ✓ Gather equipment (flashlight, probe, measuring tape). Download the water supply information into SWIFT and use the mobile app if available to complete the survey.

During the survey at the water system:

- ✓ Initial meeting with owner/operator to discuss the purpose of the survey, review documents, review population, mailing addresses, phone, email, certified operator (if necessary), etc. Discuss reporting requirements and past violations.
- ✓ Inspection: Evaluate the wellhead, including isolation distances. Evaluate the well components (pump, storage/pressure tank, sample tap, pressure relief valve, piping, treatment, etc.). Evaluate the operation/plumbing (sample plan, cross connections, etc.). Evaluate on-site records (well record). SWIFT survey questions will guide you through the inspection.
- ✓ Discuss with owner/operator regarding survey results, including deficiencies, compliance dates, monthly operational reports (if applicable), sampling requirements, etc. Summarize strengths and deficiencies to owner upon completion of the inspection.

After the survey at the office:

- ✓ Finalize the report using SWIFT surveys. Update the well record in Wellogic yourself or by emailing the Wellogic Help at wellogic@michigan.gov. Distribute the report to the well owner and/or operator. Follow-up in a timely manner on any compliance issues.

Follow-Up:

- ✓ Schedule any required follow-up inspection within 10 days of compliance date.
- ✓ Significant deficiencies require a compliance schedule.

4.4 Sanitary Survey Findings

The most critical piece of the sanitary survey is the findings that are presented to the NCWS owner. The findings communicate to the owner what was found during the survey and areas where action needs to be taken. Depending on what was identified, a finding may be written as a mandatory action (“must” or “shall”) or a recommended action (“should”).

Accurate and complete documentation of the on-site evaluation is required. The sanitary survey findings must be entered into the database and communicated to the water supply within 45 days of the site visit. Sanitary surveys are completed using SWIFT. EGLE has created detailed guidance documents which are available in Teams.

4.4.1 Sanitary Survey Data Entry

The information obtained during the sanitary survey is to be entered into SWIFT.

A copy of the sanitary survey is to be provided to the public water supply owner or a designated representative and all parties present during the survey inspection.

4.4.2 Drawing

A sketch of the water system is to be included with the report. This sketch should be as detailed as possible. The owner of the supply may have a site plan, ask for a copy. These drawings may not have everything on them that is needed, but they are very accurate, and information can be added to them. If a site plan is not available, be sure to include the property boundaries, potential sources of contamination, buildings, location of well(s) and distribution system, etc. The drawing should be dimensional and be drawn reasonably to scale.

4.4.3 Owner notification

Upon completion of a sanitary survey, the findings of the survey and analyses must be reported to the owner of the supply. This notification must be in writing and the letter to the owner should be sent from SWIFT. The SWIFT report template will include the standard information that is communicated to the owner. **Appendix D03** is the template letter from which the SWIFT survey report is built.

After completion and verification of corrections, LHD staff should update the database and notes to the water system file.

4.5 Significant Deficiencies & Risk Categories

The GWR states significant deficiencies “include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.” In general, before a SDWA violation or set of violations rises to the level of being identified as a significant deficiency (SD), at least one of the following criteria shall be met:

- Criteria 1: The violation(s) provided an opportunity or a potential for direct contamination of the NCWS.
- Criteria 2: The violation(s) demonstrated a failure in the treatment required to meet drinking water standards.
- Criteria 3: The violation(s) demonstrated a failure to confirm the NCWS was safe for public consumption.
- Criteria 4: The violation(s) demonstrated failure to deliver adequate and safe water.
- Criteria 5: The violation(s) demonstrated a failure to properly operate, maintain, manage, financially support, or provide a continuous, adequate supply of safe drinking water meeting the state drinking water standards.

EGLE has developed a policy (**Appendix D05**) that incorporates the SDWA regulations and additional requirements for surface water sources.

4.5.1 Risk Assessment during Sanitary Survey

Site specific aquifer or geologic conditions, water quality, operational requirements and vulnerable population served affect the degree of risk associated with NCWS deficiencies and the amount of time allowed to correct the problem. It is also appropriate to require certain repairs for lesser risk deficiencies in a short period of time

because the repair is relatively simple. Each NCWS must be evaluated in its own circumstances to assess and assign the appropriate risk and correction schedule. LHDs will be required to use judgment in many cases and may modify the time schedules established for corrections based on the relative health risks and the complexity of the work needed.

Low Public Health Risk - SDWIS Recommendation (Correct at next repair or well replacement)

Water supplies in this category are those meeting the drinking water standards and the geologic and aquifer conditions are conducive to the protection of a water source. Listed are examples of conditions that represent a “low public health risk”.

1. Well, storage tank(s) or well pump is located in a pit with no indication of flooding. When the well is otherwise properly constructed and topography, soil conditions and the condition in the pit do not show any indication of previous flooding.
2. The well is not accessible for maintenance or repair. A common example would be a well located inside a building.
3. The well does not meet all minimum isolation distance requirements, however, the location poses a low public health risk and water quality meets all required drinking water standards. Examples would include less than 75 feet to a sewer line with approved material, storm sewer, or a properly functioning septic tank/drainfield and the well is otherwise properly constructed and protected.
4. The well casing does not extend the minimum required 12 inches above grade. However, the ground around the well is properly sloped to divert surface water and the area is not subject to flooding.
5. There is no Water Well and Pump Record available. At the time of the next repair, the contractor doing the repair is to provide information on depth, casing size, casing length, pump make and model, etc.

Moderate Public Health Risk - SDWIS Minor Deficiency (Correct within 180 days)

Conditions in this category are those where construction, isolation, operation, or maintenance of the well and distribution system create a lesser health risk than those in the High Risk category but still represent a risk to the NCWS and consumers and must be corrected. Correction is required within 180 days from date of violation notice; however, the degree of difficulty or lack of difficulty should be factored into the compliance timeline. For example, fixing a cap or vent is relatively simple and should be done in 30 days, whereas locating and abandoning a well may be extended to beyond 180 days to 1 year or next operational season, if appropriate. Listed are examples of conditions that represent a “moderate public health risk.” There may be other conditions that equate to this level of risk and are to be dealt with accordingly.

1. An old style overlapping well cap vented through an unscreened opening between the well cap and the well casing or an unvented well cap.
2. An improperly abandoned water well.
3. Cross connections such as: hose bibs, urinals, toilet tanks, mop sinks, beverage carbonators, irrigation systems and baptismal fountains.
4. An unapproved stop and waste type yard hydrant.
5. Lack of proper sampling tap(s).
6. The well is located in a 100 year flood plain. However, if the well does flood it becomes an imminent health hazard.

High Public Health Risk - SDWIS Significant Deficiency (SD) (Immediate action up to 120 days to comply)

When a sanitary survey of a NCWS establishes that sewage, surface water, chemicals or other serious contaminants can enter the NCWS, immediate action shall be taken by the LHD to protect the public health. Appropriate action in such cases would normally be to take the well offline for potable use and require the water supply owner to immediately implement precautionary measures until the deficiency is corrected. Other conditions may be serious but not an imminent risk. Correction for these conditions is required on a fixed compliance schedule within 120 days from date of written violation notice. Extension of compliance beyond 120 days may be considered on a case-by-case basis and must be executed through an enforceable document signed by the water supply owner. A SD could be identified at any time. Information about enforcement for SDs is referenced in [Chapter 8](#).

Listed are examples of conditions representative of High Public Health Risk including those of an imminent nature and ones that may not be imminent but are still considered high risk and SDs. There may be other conditions or SDs that equate to this level of risk and are to be dealt with accordingly.

1. An *E. coli* positive coliform MCL violation.

2. An incident that causes severe structural damage to a well. For example, the well is hit by a vehicle and the well casing is broken.
3. A well head is submerged or a direct cross connection of the NCWS with surface water, chemicals, sewage, or wastewater.
4. Failure of treatment required for a surface water source or groundwater under the direct influence of surface water source.
5. Improperly constructed well; in shallow fractured bedrock formation, violation of minimum depth/casing requirements.
6. A buried well head, an unprotected suction line, a well subject to flooding, an open annulus around casing, damaged well cap, or unprotected openings in well cap or electrical conduit.
7. Cross connections - backpressure situations such as treated boilers or high pressure boilers, feed lines to equipment with a recirculating pump and cooling systems.
8. A well located near a source of human or animal waste such as sewer line, septic tank, drainfield, cesspools, lagoon, or accumulation of same.
9. A NCWS without a required certified operator that is injecting chemicals to the water or treating the water to meet drinking water standards.
10. A NCWS that fails to provide a continuous, adequate supply of water meeting the state drinking water standards. This is evidenced by a history of repeated violations of drinking water standards, frequent occurrence of indicators of contamination, or evidence of inadequate supply or pressure.

NCWS with SDs are subject to applicable reporting, notification, and corrective action as stated by the Ground Water Rule. The following summarizes the requirements (refer to applicable rules for specific rule language):

1. NCWS must be notified within 30 days of finding a SD. Copy EGLE with notice of violation.
2. NCWS has up to 30 days from notification to consult with the LHD on acceptable corrective action unless the LHD stipulates the corrective action when notification is made.
3. NCWS must correct SDs within 120 days or comply with LHD set deadline. It can be shorter (see compliance schedule), however, if beyond 120 days the schedule must be set by an enforceable document signed by the owner and the Environmental Health Director.
4. NCWS must notify the LHD within 30 days of making the correction.
5. The LHD must document the correction was completed in the database and file. The follow-up visit shall be added under a new survey date.
6. NCWS not correcting SDs are in violation of the Treatment Technique (TT). Violations of a TT require public notice, tracking and reporting. NCWS with uncorrected SDs after 12 months must provide a public Special Notice until the correction is made.

4.5.2 Inserts for Sanitary Survey Letter with SDs

SWIFT will provide the user to with language in the articulations when a SD is identified. Below are two examples of an articulation.

The (LHD) has determined the (supply name) is in violation of Michigan's Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), specifically: (cite violation(s)). This violation constitutes a significant deficiency as defined in Administrative Rule 325.10612 (2) c of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended.

Continued operation places consumers at high public health risk from your water supply, and therefore, the violation(s) has been identified as a significant deficiency as stated by the Groundwater Rule and must be corrected by date (120 days maximum). Failure to meet the deadline is a violation, subject to additional requirements and penalties.

The following paragraph may be used instead of above if there are extensive changes (connecting to municipal water or installing complete treatment) that can take more than 120 days, and thus must be enforceable through a consent order.

Continued operation places consumers at high risk of contamination from your water supply. Therefore, the SDWA requires correcting the significant deficiency(s), by date, or entry into a consent order by date. The consent order includes your plan and schedule to come into compliance and must be approved by the (LHD). Failure to meet the deadline is a violation, subject to additional requirements and penalties.

4.6 Cross Connections

Cases of illness, disease, and death have been documented as resulting from cross connections between potable water systems and nonpotable water, sewage, and chemicals. Increased awareness and vigilance through cross connection preventions programs have reduced the number and severity, but incidents continue to occur.

The scope of cross connection inspections varies from checking boiler, water softener, or toilet connections in a motel, to an inspection of piping in a sprawling chemical manufacturing plant. This section provides a general outline of cross connection terms and rules and refers to The Michigan Plumbing Code and the Cross Connection Control Manual for more detailed information and fixture testing requirements.

Cross connections may be made directly or indirectly and backflow because of a cross connection can cause serious illness and even death.

Backflow can be caused by back-siphonage, backpressure, or a combination of the two.

Back-siphonage backflow occurs when there is a partial vacuum (negative pressure) in a NCWS, potentially drawing contaminants into the water supply. The effect is like sipping a soda by inhaling through a straw.

Heavy water demands may create this back-siphonage situation. In these conditions, hoses dangling in chemistry, biology, or photography laboratory sinks, janitor slop sinks, or other systems can provide the connection through which backflow (by back-siphonage) can occur.

Backpressure backflow occurs when the pressure of the nonpotable system exceeds the positive pressure in the potable water distribution lines.

These situations may develop when a potable water supply system is directly or indirectly connected to heating systems, elevated tanks, or pressure-producing systems. For example, if a boiler used in conjunction with a heating system is operating at 15 psi pressure and the potable water supply system is operating at 20 psi, and something happens to reduce the pressure in the potable water supply system, the water pressure from the boiler will exceed the system pressure. Since water flows from high pressure to low pressure, the backpressure situation would allow boiler water to flow into the potable system.

4.6.1 Cross Connection Control Responsibility

A NCWS should develop a sound program that eliminates health hazards caused by cross connections. Often, a simple air gap or backflow prevention device can prevent hazards. Air gaps are the best measure to use when there is potential for a cross connection to an extreme hazard. LHD sanitarians should be actively pursuing the prevention and elimination of cross connections. For large NCWS it is appropriate for the sanitarian to require the NCWS owner provide cross connection control measures and report to the LHD.

4.6.2 Cross Connection Control Resources

For more information on cross connections, see the USEPA website and for information on potential plumbing violations in food service establishments, go to the Michigan Department of Agriculture and Rural Development (MDARD) website.

- Michigan's Cross Connection Control Rules Manual 4th Edition
michigan.gov/documents/deg/CrossConnectionManual_251521_7.pdf
- USEPA's Cross Connection Control Manual
epa.gov/dwsixyearreview/drinking-water-distribution-systems
- MDARD's Potential Plumbing Violations in Food Service Establishments
michigan.gov/documents/mda/MDA_PtntialPlmbngViolChrtAug08_247179_7.pdf
- Michigan Plumbing and Mechanical Contractors Association
mpmca.org/certified-backflow-tester-search
- American Society of Sanitary Engineering
asse-plumbing.org/bpatcertlist.asp

4.7 Backflow Prevention Techniques

Once a cross connection is discovered, its elimination first involves determining how backflow might occur in that situation. If backflow can only occur by back-siphonage, then a particular backflow prevention device is required. If, however, backflow could occur by either back-siphonage or backpressure, then that device may not be appropriate. Refer to the Michigan Plumbing Code and the Cross Connection Control Manual for specifics and appropriate use of devices.

A Cross Connection Control Chart with photos and drawings is available in **Appendix D10**.

4.7.1 Air Gap

An air gap is a physical separation of the potable and nonpotable systems by an air space. It is the most reliable backflow prevention measure. The required air gap is at least 2 times the inside diameter of the water inlet pipe, but not less than 1 inch and need not be more than 12 inches.

4.7.2 Reduced Pressure Zone (RPZ)

This assembly provides protection against backpressure and back-siphonage. The RPZ can be used in continuous pressure and in high-hazard conditions. It consists of 2 independently acting internally loaded check valves separated by a reduced pressure zone. The RPZ device requires periodic testing by certified personnel to determine if they are operable.

4.7.3 Pressure Vacuum Breaker (PVB)

This device allows air to enter the waterline when the upstream is reduced to 0 or below. The device has a vacuum relief valve which is internally loaded, normally by means of a spring. A PVB may be installed for use in continuous pressure and must be installed at least 6 inches above the highest outlet that it is to serve.

4.7.4 Atmospheric Vacuum Breaker (AVB)

An AVB allows air to enter the waterline when the pressure upstream is reduced to zero or below, however, since the vacuum relief valve is not internally loaded the device must be installed on a discharge side of the shut off valve. AVBs should not be subjected to continuous flows for periods of more than 12 hours. Must be installed at least 6 inches above the highest outlet it is to serve.

Hose Bibb Vacuum Breaker (HBVB) is used to protect primarily against back-siphonage at otherwise unprotected hose bibs. Unless special circumstances apply, water connections at individual licensed campsites are not required to have a HBVB because modern recreational vehicles are required to contain internal backflow prevention.

4.7.5 Double-Check Valve Assembly (DCVA)

The DCVAs are used for a direct connection between two potable systems and therefore have very limited application. This device protects against backpressure and back-siphonage conditions only if the cross connection protection is from substances that do not constitute a health hazard.

4.7.6 Double-Check Valve with Intermediate Atmospheric Vent (DCVAV)

The DCVAV is permitted for low or moderate hazard with small pipe sizes. It can be used to protect against backpressure and can be used in continuous pressure. These are often installed on domestic boilers (no chemicals). A specific type made of stainless steel has also been developed for carbonated beverage application.

Chapter 5

Construction Permit Process and Source Water Assessment

Pursuant to the SDWA, rule R325.11304, owners of NCWSS are required to submit construction details and an acceptable scaled drawing (properly dimensioned) showing important aspects of the general layout of a proposed waterworks system or a portion of the system. They must also obtain a permit for the construction, alteration, or addition to the waterworks system from EGLE or its representative. (A treatment permit is also required for any treatment facilities used for meeting drinking water standards or for public health purposes, or that include chemical injection before the water may be used. See [Chapter 11](#) for treatment permit requirements.)

The “Application to Install or Alter Public Water Supply System” form (**Appendix E03**) was developed for use in the issuance of Type II public water supply permits. The noncommunity program contract specifies that Type II permits are issued on the EGLE form.

There are several situations where permits may be required:

- ✓ New construction of an entire waterworks system,
- ✓ replacement of a water well,
- ✓ alterations of a waterworks system, or
- ✓ existing water supplies that are reclassified to a noncommunity system.

Final approval to put the water system in service may be granted when the LHD has approved the well construction, all required water sample analysis results, completed a sanitary survey (if necessary), received a satisfactory well log from the driller, and if new, the NTNCWS has submitted a completed capacity development form.

5.0 When a Permit is Required

In Michigan, construction permits are required before construction of wells, water supplies, and certain water treatment systems at NCWS. It is important to know when a construction permit is required and when it is not.

If requested by the department, a NCWS shall submit an engineering report for a significant project or a basis of design, or both for approval by the department (SDWA, Rule 1303).

In general, a permit is required when:

1. a new or replacement well is drilled,
2. constructing a new distribution system,
3. significant modifications or alterations occur at an existing water supply, or
4. a reclassified system is onboarded (see [section 3.5](#)).

A permit may be required for other NCWS alterations, treatment, modifications, or additions such as well pump replacement, in accordance with the SDWA.

“Alter” is defined in the SDWA as the modification of, or addition to, an existing waterworks system affecting the flow, capacity, system service area, source, treatment, or reliability.

Example: The expansion of a business could require additional source capacity. To meet the capacity requirements the supply owner has the well deepened and a higher capacity pump installed. Note: each of these items independently would be considered an alteration requiring a construction permit.

5.1 Permit to Install Water Supply Instructions

The Type II permit application form [EQP 2024 Application to Install or Alter a Public Water Supply System](#) provided by EGLE must be used for Type II public water supply permits. The SDWA dictates a permit is good for two years.

There are nine sections to the permit with an additional fixture count worksheet. This permit application is to be completed by the owner or their agent. It is crucial all sections of the application are completed. The LHD staff must make sure the applicant understands all aspects of the permitting process before any work is done.

The permit application is used for multiple scenarios. Letters have been developed for the LHD to use as a template when approving an application to construct. **Appendix E06** can be used for water systems that are significantly altering a water supply, “found systems” new to the noncommunity inventory, and reclassifications. **Appendix E06.1** is written for water systems that are drilling a replacement well or new construction noncommunity systems.

Individual wells are assigned a water system facility ID number in SDWIS. Additional or replacement wells for existing NCWS are assigned a new well facility ID. If the initial well is abandoned, the replacement well is assigned the next sequential three digit well facility ID. For example; the original well was 2000101, facility ID WL001. The new or replacement well becomes 2000101, facility ID WL002. Each sequential well on the property is assigned a different facility ID whether the wells are interconnected or not. This assures water quality is assigned to a specific well source.

Review engineered plans prior to the site evaluation. For large projects, consult with the EGLE area representative for a joint review of the application.

Review the scale drawing at the time of the site visit. If the scale drawing is inadequate, it should be returned to the applicant. If only slight modification is needed, the LHD may choose to make the changes (with the applicant's knowledge and approval).

The applicant must read and sign the certification portion of the application before the permit can be processed. The signed statement shows the applicant understands this is a construction permit only and the supply cannot be put into service until final approval.

Site Evaluation

The site evaluation includes both a site visit and office records review. The office review must consider available water quality, quantity, and source protection, review of water well records and knowledge of the well site area. Consideration of water quality focuses on contaminants with primary public health concerns: Nitrate/nitrites, Coliform, SOC's, PFAS, & VOC's, Arsenic, etc.

A review of potential poor aesthetic quality should also be brought to the water supply owner's attention, e.g., hydrogen sulfide, manganese, iron, hardness, etc. Consideration of chemical concentrations might result in dictating well depth or location or might impact on the issuance of a permit.

During the site visit, evaluate the proposed well location regarding surface topography, property boundaries, structures, isolation distances and rights-of-way to assess control over the area. It is important to consider neighboring land activities when siting a well.

Contamination Sources Nearby

Office review will need to be completed to determine the locations of any surrounding sites of contamination. The LHD should review EGLE's Environmental Mapper to determine the locations of:

- Part 201 Sites of Environmental Contamination
- Part 213 Leaking Underground Storage Tanks
- Part 211 Underground Storage Tanks

Upon identifying a site of contamination within 800 ft for Type IIb or 2000 ft for Type IIa, the LHD will need to conduct the following:

- Determine if there are any baseline environmental assessments (BEA), or groundwater restrictions in the area by reviewing the contamination site and/or office files.
- Contact EGLE Remediation and Redevelopment Division to determine site specific information such as; type and concentration of contaminant, groundwater flow direction, gradient, extent of contaminant, and any efforts to remove the contaminant.

In addition, any of the following potential sources of contamination will need to be identified prior to permit issuance: landfills, oil and gas wells, hazardous waste, septage application fields, and groundwater discharge sites.

Water Supply Classification

A Type IIa has an average daily water production of 20,000 gallons per day for the maximum month. The Type IIa supply is to prepare a study of hydrogeological conditions as required by Rule 813 of the SDWA. Contact EGLE prior to permitting a Type IIa water system.

5.2 Verifying Water System Peak Demand

A properly designed water supply system should deliver water at the desired quantity, quality, and pressure to any outlet on the system during the periods of heaviest use. To accomplish this, the peak demand is calculated and the well and pump are sized to meet or exceed the demand. (**Appendices E01, E01.1, E01.2, and E04** will aid the LHD in calculating peak demand.)

It is recommended that the desired minimum pump capacity be specified on the NCWS permit at the time of issuance. Desired capacity indicated on the permit will aid the well driller in developing an adequate water supply for the proposed water system.

The sanitarian must utilize professional judgment when evaluating the minimum desired pump capacity for a NCWS. Factors such as building type, future expansion or use of the establishment, hours of water usage, and any water use characteristics unique to the proposed establishment type must be considered if water demand figures are to be reliable. When yield criteria for NCWS are specified by rule or policy (e.g., campgrounds), the NCWS must be designed in accordance with those requirements.

The methods for determining peak demand discussed below are based on estimated water usage. Confidence in the water usage figures may be greater if more than one method is used for the proposed water supply and a comparison indicates the peak demand to be similar. Ten (10) gpm is the minimum pump capacity for any NCWS.

Method 1 – Fixture Count Method

This method involves counting the number of fixtures and water outlets in the proposed building and multiplying by the peak demand per fixture indicated in Table 5-1. The resulting figure represents the total peak demand or recommended pump capacity for the building. The figures in Table 5-1 are based on the probability that as the number of fixtures increases, the fixtures in use at any given time decreases.

A 25 unit motel has been proposed. Each unit will have a water closet (tank type), lavatory, and shower. In addition, two hose bibb connections (5/8") will be used for lawn sprinkling. A total of 77 fixtures have been proposed. Table 5-1 indicates a peak demand of 0.50 gpm per fixture.

$77 \times 0.50 \text{ gpm} = 38.5 \text{ gpm}$. Therefore, the minimum desired pump capacity should be 38 or 39 gpm.

Table 5-1 Peak Demand in gpm per Fixture

Type of Building	Total Number of Fixtures							
	25 or less	26-50	51-75	76-100	101-200	201-400	401-500	Over 500
Hospitals	1.00	1.00	0.80	0.70	0.60	0.50	0.45	0.40
Churches, Halls, Theaters	1.50	1.25	1.00	0.80	0.75	0.70	0.60	0.50
Mercantile Buildings	1.30	1.00	0.80	0.75	0.70	0.60	0.055	0.50
Office Buildings	1.20	0.90	0.75	0.70	0.65	0.50	0.40	0.35
Factories or Warehouses	1.25	1.00	0.80	0.75	0.70	0.60	0.55	0.50
Schools	1.20	0.85	0.70	0.65	0.60	0.55	0.45	0.45
Motels and Hotels	0.80	0.65	0.55	0.50	0.45	0.40	0.35	0.30
Apartment Buildings	0.60	0.55	0.50	0.40	0.35	0.30	0.25	0.20

For buildings with less than 25 fixtures, the pump capacity should be a minimum of 10 gpm. Where laundries or swimming pools are to be supplied an additional 10% should be added to the pump capacity. Where additional water is required for heating, cooling, or other special processes, the water usage should be added to the pump capacity after peak demand is calculated using Method 1.

Method 2 – Residential Unit Method

Estimated peak demand flow for schools, motels, office buildings, churches, apartment complexes, and similar type buildings can be determined using data from similar NCWS of comparable size and usage. Where the total gallons per day (gpd) water usage can be estimated, the peak demand gpm can be determined using a basic formula derived from studies of water use patterns for residential customers. If actual data from similar buildings is not available, an estimate of daily water usage for various establishment types can be obtained from Table 5-2. A residential unit (N) is equivalent to 350 gpd. Using Method 2, the flow rate in gpm is equivalent to 10 times the square root of the number of units served; therefore: $\text{gpm} = 10\sqrt{N}$.

An office building to accommodate 80 workers is proposed. The building will be used for one 8-hour work shift. Table 5-2 indicates a flow of 15 gpd per person per work shift. The total daily flow: 80 workers x 15 gpd x 1 shift = 1200 gpd. $1200\text{gpd} \div 350\text{gpd} = 3.42 \text{ N units}$.

$10\sqrt{3.42} = 18.5 \text{ gpm}$. The minimum pump capacity would be 18 - 19 gpm.

Table 5-2 Estimated Daily Water Usage

Type of Establishment	gpd/Person (Unless Otherwise Noted)
Airports (per passenger)	5
Bathhouses and swimming pools	10
Camps: Campgrounds	See Footnote ¹
Construction camps (semi-permanent)	50
Day camps (no meals served)	16
Resort camps (night and day) with limited plumbing	50
Luxury camps	100
Church (per auditorium seat)	5
Church (with substantial kitchen wastes, per auditorium seat)	7-10
Cottages and small dwellings with seasonal occupancy	50
Country clubs (per resident member)	100
Country clubs (per non-resident member present)	25
Dwellings	
Boarding houses	50
additional for non-resident boarders	10
Luxury residences and estates	150
Multiple family dwellings (apartments)	80
Rooming houses	40
Single family dwellings	75
Factories (gallons per person, per shift, exclusive of industrial)	35
Hospitals (per bed space)	250
Hotels with private baths (2 persons per room)	60
Hotels without private baths	50
Institutions other than hospitals (per bed space)	125
Laundries, self-service (gallons per wash, i.e., per customer)	50
Mobile home parks (per space)	200
Motels with bath, toilet, and kitchen wastes (per bed space)	50
Motels (per bed space)	40
Picnic parks (toilet wastes only) (per picnicker)	5
Picnic parks with bathhouses, showers, and flush toilets	10
Schools	
Boarding	100
Day, without gyms, cafeterias, or showers	15
Day, with gyms, cafeteria, and showers	25
Day, with cafeteria, but without gyms or showers	20

Type of Establishment	gpd/Person (Unless Otherwise Noted)
Service stations (per vehicle served)	10
Swimming pools and bathhouses	10
Theaters: Movie (per auditorium seat)	5
Drive-in (per car space)	5
Workers	
Construction (at semi-permanent camps)	50
Day, at schools and offices (per shift)	15

¹Campground water supplies must be sized in accordance with Act 368, P.A. 1978, Part 125, Rule 9. (2)(A)(b)

Table 5-2 values are based on quantities of sewage flow and does not include demand for lawn sprinkling, ground water heat pumps, and other water using equipment not connected to a sewer. Figures for such equipment should be added to the Method 2 calculated peak demand to determine desired minimum capacity.

Method 3 – Fixture Method

The Fixture Method should be used for determining peak demands for food service establishments. A list of water using fixtures may be obtained from architectural plans submitted to the local health department for review. The Fixture Method may also be used for facilities not listed in Table 5-2, or where it is felt that flow rates in Table 5-2 are inaccurate or unreasonable. The Fixture Method utilizes a list of commonly used water fixtures, where each fixture type is assigned a value which reflects the demand producing effect on the NCWS (Table 5 - 3). The sum of the combined values for all fixture types is then adjusted to compensate for the probability that as the number of fixtures increases, the relative number in use at any given time decreases. The result is a peak demand flow and basis for establishing a minimum pump capacity.

1. Determine the number of each type of water using fixture to be served by the proposed water supply.
2. Multiply the number of each fixture type by its assigned fixture value (from Table 5-3) to determine the fixture value total.
3. Add up the various fixture value totals to obtain the establishment fixture value. Do not include outside hose bibbs which may supply water for lawn sprinkling.
4. Apply the establishment fixture value to the curve of the graphs on page 5-9 to determine the estimated peak demand.
5. Fixture values (gpm flow) for outside hose bibbs which may provide water for lawn sprinkling during peak water usage periods should be added directly to the estimated peak demand as determined in Step 4. This will determine the desired minimum pump capacity.

Example of Fixture Method:

A small food service establishment is proposed with the following fixtures:

Fixture Type	Number of Fixtures	Fixture Value	Value Total
Water Closets, tank	3	5	15
Lavatories	3	3	9
Kitchen sink, small	1	6	6
Kitchen sink, large	1	8	8
Service sink	1	10	10
Garbage disposal	1	5	5
Ice machine	1	2	2
Establishment fixture value:		55	
Hose bibb (outside) 5/8" connection	1	5	5

Using the graphs from page 5-9, the estimated peak demand based on an establishment fixture value of 55 is equal to 20 gpm. The 5 gpm demand for the 5/8" outside hose bibb must be added to the estimated peak demand.

$$20 + 5 = 25 \text{ gpm.}$$

Table 5-3 Fixture Values

Fixture Type		Fixture Value
Water Closet, with tank		5
Water Closet, with flush valve		27
Urinal, with tank		4
Urinal, with flush valve		15
Combination fixture		4
Lavatory		2
Bathtub, or tub/shower combination		4
Bidet		2
Shower		3
Drinking fountain		0.75
Hose bibb or yard hydrant, 1/2" connection		3
5/8" connection		5
3/4" connection		10
Washing machine, 1/2" connection		3
5/8" connection		5
3/4" connection		10
Laundry tray		4
Lawn sprinkler, per sprinkler head		5
Auto washing, hand spray type		5
Tractor and equipment washing		5
Water softener regeneration		7
Dental unit		1
Dental lavatory		2
Garbage disposal, domestic		3
Commercial		5
Kitchen sink, small		6
Large		8
Spray rinse, hand operated		4
Ice machine		2
Ice cream machine		2
Ice cream dipper well		2
Glass filling unit		2
Hot chocolate unit		0.5
Coffee urn		0.5
Dishwasher, residential		2.75
Automatic dishwasher	Use gpm flow as indicated in NSF Food Service Equipment listing. If not listed, see example below.	

Demand for lawn sprinkling and water softening regeneration operating at times other than business hours of establishment may be eliminated from calculations. Fixture values for other water using equipment, such as groundwater heat pumps, air conditioners, evaporative coolers, etc., will vary with the size of the unit. Consult manufacturer specifications to determine flow rate. These flow rates should be added directly to the peak demand.

Determining GPM Flow Rate for Automatic Dishwashers

To determine gpm demand for final rinse, calculate the machine operating time in seconds by adding the wash, rinse, and dwell times (from NSF listing). Divide 3600 seconds (1 hour) by the machine operating time to determine the number of possible machine operating cycles per hour. Multiply the cycles per hour by the factor 0.70 (based on 70% actual machine operating time during peak periods due to time involved in loading and unloading) to obtain the number of probable machine cycles per hour (Note: The 0.70 efficiency factor does not apply to conveyor type dishwashers). Multiply cycles per hour by the rinse cycle in minutes to obtain rinse minutes per hour. Divide gallons per hour (gph) water usage (from NSF listing) by rinse minutes per hour to

obtain gpm final rinse demand.

The NSF listing for a certain model dishwasher is as follows: 70 gph water usage, 120 sec wash, 30 sec rinse, 60 sec dwell

Machine operating cycle time = 120 + 30 + 60 = 210 sec

(sec/hr.)/(sec/cycle) = 3600/210 = 17.14 machine cycles/hr.

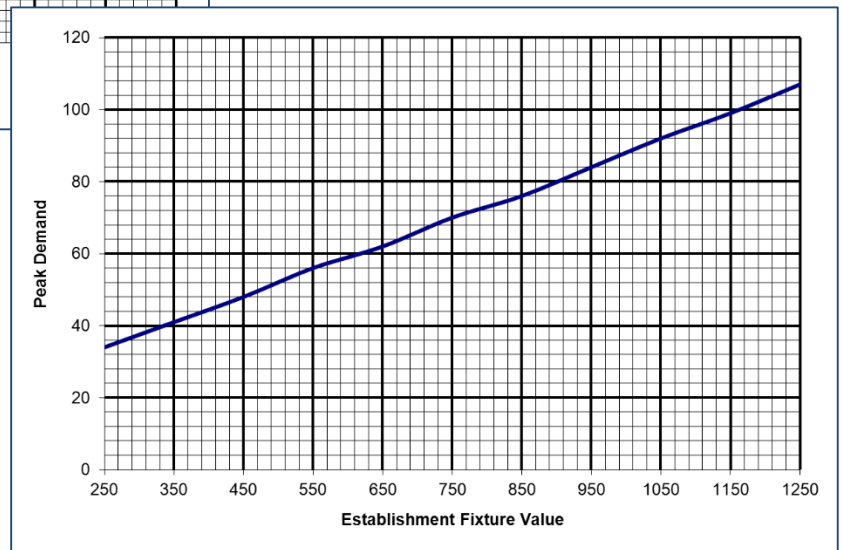
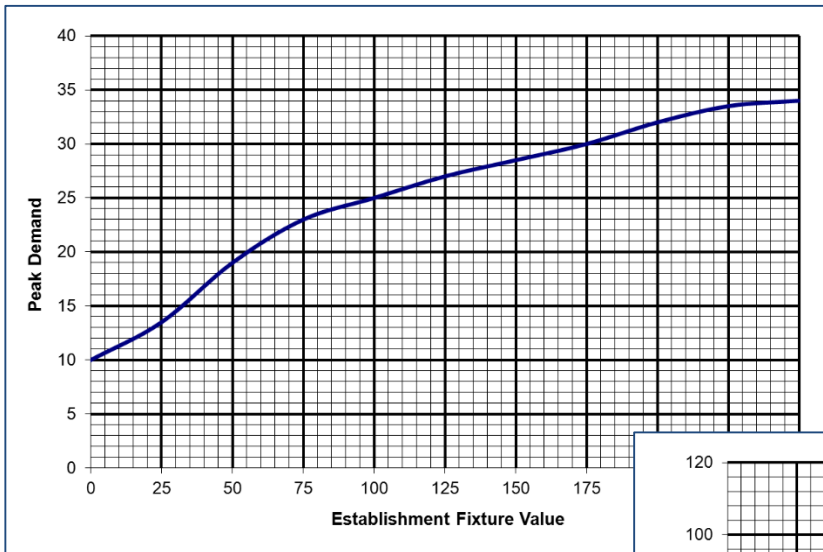
17.14 x 0.70 = 11.97 probable machine cycles/hr.

30 sec rinse = 0.5 min.

11.97 cycles/hr. x 0.5 rinse min = 6 rinse min/hr.

gph / (rinse min/hr.) = 70/6 = 11.7 gpm demand

The applicant may have like-sized facilities where water usage is known, e.g., chain of fast food restaurants. In those cases, the system sizing could be based upon the known water usage and gpm pumping capacity of pump serving that NCWS. Special procedures should be in place when the LHD knows the proposed water well location is in a low water producing area. These graphs can be found in the appendices and in the Excel peak demand worksheets.



Fixture Values Larger Than the Graph

The pump size for fixture values that exceed 1250 can be determined by using the formula $y = x * 0.08 + 8$

An important part of the approval of plans for NCWS is verifying needed gallons per minute (gpm) capacity requirements as determined by the water system's proposed design/use. The reviewing sanitarian confirms the minimum production capacity and specifies the gpm on the permit. Engineered plans should include the minimum production capacity for the supply. For small NCWS, where engineered plans are not submitted, the sanitarian may assist the applicant in determining minimum capacity.

When determining final acceptability of an installed NCWS there are important factors to consider in system sizing:

1. The installed pump must meet the permit gpm requirement. Note: The “total dynamic head requirement” can also affect the ability of the pump to deliver the proper amount of water at adequate pressure. The pump must be sized to account for pumping level, pressure setting and friction loss in the system.
2. The pressure tank must have a drawdown capacity equal to or greater than the gpm requirement. Storage tank size becomes less critical when a variable frequency drive (VFD) constant pressure system is installed. A VFD motor must still meet the peak demand requirements. Whether a VFD or a stop-run cycle is used, larger pumps should allow for longer run times. Cycle stop systems are not recommended by EGLE.
3. The well capacity must be capable of meeting the gpm peak demand. To determine the well capacity, review the water well record. Information reported on the well record (pumping level and pumping rate) shall be used to determine the ability of the well to meet the NCWS peak demand.

When the sanitarian knows a proposed Type II supply will be constructed in a low production area (aquifers not capable of pumping much water) these issues and possible options should all be discussed in advance of issuing the permit. If a low producing aquifer is encountered, it may be necessary to require a 24, 48 or 72 hour pump test. The pump test is done to confirm the ability of the aquifer to meet water use supply demands.

If the well capacity cannot meet the NCWS gpm requirements, it may be necessary for the NCWS to design a system that will provide additional water during periods of peak demand. This could be drilling multiple wells, a pump and re-pump system or a hauled water system.

A relatively small difference between peak demand and well capacity can be made up with installation of multiple pressure tanks and adjustment of storage tanks pre-charge setting. The information on make/model of storage tank, pre-charge settings and capable water production over the peak demand period (usually considered to be 7 minutes at most NCWS) is to be provided and approved in advance of installation. When the pumping rate approaches the aquifer capacity, the final pump capacity might have to be limited by throttling down the pump.

5.3 Permit Conditions

Specific construction, isolation and operation conditions may be required of the applicant. The deviation condition and any other added requirements must be written in the permit letter. It is critical that a copy of the permit letter be provided to the Michigan registered water well drilling contractor if a well is included in the project. A Michigan registered well drilling contractor must plug abandoned water wells at a NCWS.

Examples of special conditions/deviations may include:

- Increasing minimum casing depth requirement when a reduction in isolation area is proposed or to bypass an area of known poor water quality.
- Requiring the placement of the well up gradient from a source of contamination.
- Requiring a minimum or restricting the maximum well yield.
- Requiring an increase in the standard or major source of contamination isolation area.
- Notification requirement that an owner or drilling contractor contact the LHD prior to performing a specific part of the well construction. The sanitarian may specify 24 or 48 hour notification prior to grouting/construction of the well. This advance notice will give the sanitarian the opportunity to be present during construction and grouting of the well.
- Specific grouting material in a known area of contamination, e.g.; neat cement.

5.4 Permit Deviations

When reviewing the construction of a proposed well, situations may arise where complete adherence to the SDWA requirements is not possible.

The SDWA (R 325.10802) authorizes LHDs to grant deviations from well isolation and construction requirements in prescribed circumstances where no health hazards will result. However, deviations are limited to new construction and should be used as a last resort. Deviations cannot be authorized after a well is installed. When considering deviations from minimum isolation requirements, the isolation should be maximized to the extent possible.

A written deviation procedure is used to avoid conflicts with water supply owners or well drilling contractors and can outline steps to be taken along with an appeal process. LHDs should adopt a deviation procedure in their departments. The LHD should require a written deviation request with supporting information from the applicant. **Appendix E09** is a template for an isolation deviation request.

A deviation from construction or isolation regulations may be granted by the Environmental Health Director (if requested) when public health is protected. The deviation request and approval must be in writing. If granting a deviation, describe the nature of the deviation and the specifics supporting the decision to approve the deviation. EGLE is available to consult with LHD's on specific cases. Deviations for water supplies constructed after the effective date of the rules (July 11, 1978) must be a *written condition* on a construction permit or other written approval.

Each NCWS permit must be evaluated in its own circumstances. LHD staff is required to use judgment when making decisions regarding whether the owner has adequately demonstrated a deviation will not result in a potential health hazard.

The following lists some of the conditions which should be considered when deciding potential risk:

- ✓ Depth of existing impermeable formations that may protect the groundwater, e.g., clay
- ✓ Direction of groundwater flow
- ✓ Contiguity of impermeable layers
- ✓ Depth of grouted casing
- ✓ Permeability of overburden
- ✓ General well construction
- ✓ Well capacity
- ✓ Isolation to sources of contamination

Deviation procedure documentation steps:

1. Obtain a written deviation request with supporting information from applicant.
2. Evaluate the site to confirm the need for a deviation.
3. LHD approves or denies the deviation contingent upon the supporting information showing public health and water source will be protected.

Notify applicant in writing of the specific reasons for approval or denial. If denied, applicant is offered the opportunity to attend a hearing to appeal the denial. Following a hearing, a letter is sent to the applicant providing the reason for accepting or denying the appeal.

5.5 Permit Issuance

After reviewing the application and completing the site evaluation, the permit can be issued. The applicant must be aware the permit is to construct a well and install pumping equipment only. The well is not to be put into service until final approval has been granted.

A permit issuance letter (**Appendix E06**) should be sent to the applicant. **Appendix E08** is a Permit and Final Inspection Checklist which can ensure important steps are not missed during the permit and final approval process.

5.6 Variances and Exemptions

Variances or exemptions cannot be issued by the LHD, as referenced in Section 20 of the SDWA (in accordance with Public Law 93-523 1974) and defined in the Rules R325.10104 (m) and R325.10109 (i).

A variance or exemption allows a public water supply to be in noncompliance (temporarily for an exemption) with a state drinking water standard. Either must be in the form of an enforceable administrative order containing applicable conditions, specific compliance requirements, and time schedules for compliance. EGLE has not adopted USEPA criteria for variances or exemptions and will not issue them.

Variance

"...an order, with appropriate conditions and compliance schedules and requirements, which is issued by the director to a supplier of water, and which permits a public water supply to be in noncompliance with a state drinking water standard, including a specified treatment technique."

Exemption

“...an order, with appropriate conditions, time schedules, and compliance requirements, that is issued by the director to a supplier of water permitting a public water supply to be in temporary noncompliance with a state drinking water standard, including a specified treatment technique.”

5.7 Permit Terms

The department may attach any term or condition to a permit issued that it deems necessary to assure proper construction, alteration, and operation of a waterworks system, or portion of the system to protect public health (SDWA, Rule 1308).

A permit will expire within 2 years of issuance unless construction or alteration commences or if the LHD issues an extension (Rule 1306). A request for extension must be in writing from the water supplier. If a project is expected to last longer than 2 years, the LHD should contact the owner periodically to check in on the progress.

The owner must notify the LHD as soon as possible if changes to the approved permit are needed.

All analytes required for a NCWS shall be required on a new or replacement well.

5.8 Campgrounds

When issuing a well permit in a licensed campground it is recommended that further consultation occur with EGLE Campground Program staff. Assistance may be available to calculate the minimum capacity and provide guidance on the well pump house requirements as stated in Part 126 of Act 368, Public Act and Rules governing campgrounds. Rule 325.1559 (2) requires a minimum pumping capacity of 30 gallons per minute.

When calculating the population served in a campground, the LHD should use four persons per site unless the campground owner has provided specific documentation to the contrary. This population calculation will determine if a campground should be sampling monthly due to a potential population over 1000 persons per day. This shall not be used to determine classification of the public water supply. Refer to [section 3.1](#) for classification definitions and **Appendix C03**.

The number of service connections should not include the number of sites but should be the number of fixed buildings connected to the water well plus one connection for the distribution line to the campground.

5.9 Water Withdrawal Assessment Tool (WWAT)

In July 2008, the Michigan Legislature passed amendments to Part 327, Great Lakes Preservation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 327). The amendments established new requirements for the registration and evaluation prior to the installation of capacity to make a new or increased large quantity withdrawal (NILQW) from either groundwater or surface water. A NILQW includes the installation of a well with a new pump that is rated at 70 gpm or greater, the installation of a pump in an existing well that results in an increase in pump capacity of 70 gpm or greater, or any addition of capacity to a property that results in a total capacity of 70 gpm or greater.

The WWAT is an Internet based program designed to estimate the likely impact of a proposed water withdrawal on nearby streams and rivers. Every NILQW is required to be evaluated relative to the likelihood of causing an Adverse Resource Impact (ARI) using the WWAT. The WWAT can be accessed <https://www.egle.state.mi.us/wwat>.

Once a proposed well drilling site is located and a NILQW is proposed, information such as pumping capacity and approximate well depth are entered into the WWAT. The WWAT will determine if the proposed NILQW is acceptable. If deemed acceptable the NILQW may be registered, and the water well may be drilled. If it is determined that the NILQW is likely to cause an ARI, a site specific review (SSR) request must be submitted to EGLE.

A NILQW must be registered before commencing with the withdrawal. Registration can only be obtained through use of the WWAT or through the SSR process. Approval of a NILQW through either process results in the creation of a NILQW registration receipt. A registration authorizing a NILQW is valid for 18 months. The well

must be installed and ready for operation within 18 months, or the registration is no longer valid and the NILQW is no longer authorized by law.

When applying for the LHD well construction permit, the WWAT or site specific review registration receipt should be taken to the LHD. The registration receipt provides proof that the NILQW is authorized in Part 327 and not likely to cause an ARI. Failure to provide proof of the NILQW registration may result in the LHD's refusal to issue the well construction permit, or the permit applicant may be asked to sign an agreement form documenting they have been informed of the requirements for registering a NILQW.

Property owners seeking an LHD permit to construct a well are advised that failure to properly register the NILQW may result in an inability to legally use the well and/or significant monetary penalties.

5.10 Denial of Permit

Rule 1307 of the SDWA states that the department may deny a permit request when it determines that a NCWS cannot provide a continuous and adequate supply of water meeting the state drinking water standards.

5.11 Approved Standards

Equipment and Materials

Section 13 (2) of the SDWA requires that all water treatment chemicals at a NCWS have the NSF-60 certification and all products that contact drinking water at a NCWS have the NSF-61 certification. Also, Rule 505(e) of the SDWA states, "A supplier of water shall comply with all applicable state and local plumbing codes."

Well Construction

All drinking water wells constructed in the state must meet the construction standards of the Michigan Water Well Construction and Pump Installation Code, Part 127 of 1978 PA 368, as amended. NCWS facilities must also meet additional requirements of the SDWA.

Raw Water Sampling Tap

NCWS are required to provide sampling taps in a convenient location as close to the well as possible. The sampling tap is to be installed before any type of treatment, i.e., softener, in line filter, reverse osmosis, chlorine injection, carbon filter, aeration, corrosion control treatment, etc. The raw water sampling tap is used to determine the water quality coming directly from the well. The sampling tap should also be one of the required sampling locations following a positive coliform sample.

5.12 Capacity Development

Construction of or transition to a NTNCWS cannot begin until the owner has satisfactorily demonstrated the water system owner has the capacity to comply with the provisions of the SDWA. Capacity development should also be discussed with any new owner of an existing NTNCWS. Capacity is defined as the overall capability of a NTNCWS to reliably produce and deliver water meeting all national primary drinking water regulations in effect or likely to be in effect, on the date of commencement of operation.

Capacity encompasses the *technical*, *managerial*, and *financial* capabilities that enable the NCWS to plan, achieve, and maintain compliance with drinking water standards. The capacity development plan will educate the water supply owner about initial and future requirements and costs of being a NCWS owner.

Technical Plan

- New NTNCWS complete a permit application.
- LHD reviews permit for approval/denial.
- Existing water systems that are reclassifying to the NTNCWS status shall submit plans and specifications of existing well, complete the permit form, complete a treatment permit, if necessary, etc.
- Collect water samples and submit results for all NTNCWS analytes.
- LHD conducts a sanitary survey to assess status of existing NCWS compliance.

Managerial Plan

- Designation of a certified drinking water operator.

- Submit contingency plan preparing water system for appropriate response to loss of normal water service.

Financial Plan

- Acknowledge resources available to provide estimated costs for construction, monitoring, annual fees, operation and maintenance, and emergencies.

5.13 Final Inspection

After a well or waterworks system has been constructed an on-site inspection is completed. For well installations, EGLE recommends collecting one of the required coliform water samples and the nitrate/nitrite sample during the final inspection. If the final inspection does not include collecting at least one of the coliform samples the LHD shall confirm all chlorine was flushed from the system prior to sampling. **Appendix E08** is a Permit and Final Inspection Checklist which can ensure important steps are not missed during the permit and final approval process.

Notify the owner in writing about any items requiring corrective action. Do not approve the water supply to begin operations until all items are in compliance with the SDWA and the Well Construction Code.

Completion of the final inspection includes the following:

- Approval of the construction and location of the well.
- Approval of pump installation and capacity.
- Sanitary survey or equivalent when distribution systems are involved.
- Treatment permit approvals, if necessary.
- Documentation that testable backflow prevention devices were tested after installation.

Well Record

Before final approval may be issued for a NCWS a completed well record must be obtained. Part 127 of Act 368 requires well drillers to submit a well record within 60 days of the completion of a well. The owner and well drilling contractor should be advised of the NCWS requirement so arrangements can be made for a quick submittal of the well log.

Review the completed well log for accuracy. The pump and pressure tank size should correspond with the gpm permit requirement. If there were special permit conditions regarding type of grout, depth, penetration of confining clay layer, etc., this should be confirmed on the log.

Well Capacity Approval

The well pumping capacity must be considered prior to issuing final approval. When determining final acceptability of an installed water supply system, there are three very important factors to consider in system sizing. 1) The installed pump must meet the minimum gpm requirement. 2) The pressure tank must have a draw down capacity equal or greater than the gpm. 3) The well capacity must be capable of meeting the gpm peak demand. To determine the well capacity, review the water well record. Information reported on the well record (pumping level and pumping rate) can be used to determine the ability of the well to meet the water system peak demand.

Water System Components

The water service line must be approved material with 160-psi rating. There is a printed specification line on plastic service lines providing specifications.

Storage tank is sized to meet the minimum capacity, i.e., 20 gpm pump must have a pressure tank with at least an equal draw down capacity. As the pumping gpm increases the tank size storage capacity should increase to provide the larger pumps more running time.

5.14 Final Approval

A minimum of two consecutive coliform non detect samples and an acceptable nitrate and nitrite sample must be collected before a TNCWS can be put into service. The coliform samples are to be collected a minimum of 24 hours apart. The additional NT sampling requirements (SOC, PFAS, VOC, metals, arsenic, and cyanide) should be collected, and results reviewed before final approval. (If the permit is for a replacement well and the

NCWS has a history of no detections, it may be allowed to operate but all samples should be collected immediately following completion of the well and reviewed prior to final approval.) The results will determine the monitoring frequency assigned for each analyte.

Prior to collecting any samples, the following conditions must be met:

- All traces of chlorine must be flushed from the system. To confirm the absence of chlorine, a chlorine test kit with detection levels down to at least 0.1 ppm is used to check for chlorine.
- The well should be pumped to waste for at least 24 hours to purge the water supply. This will help remove chlorine, chlorination by-products, glues, solvents, cutting oils, grease, etc., which may have been introduced into the system during construction.

Following the installation of a replacement well, monitoring waivers and previous reductions are no longer valid. All monitoring frequencies revert to initial schedule as outlined in the SDWA, except increases in total coliform under the Revised Total Coliform Rule.

After the final inspection, an approval letter (**Appendix E03**) outlining water quality compliance and source approval is sent to the supply owner authorizing the use. The letter provides the owner with future sampling parameters, frequencies, and locations. A nontransient approval letter should also include specific operator certification requirements (name, classification, required CECs, etc.).

Copies of the final drawing, well log and copies of any sample results are distributed with the proper letter.

A final inspection can be documented as a sanitary survey if all survey components are reviewed. A properly documented construction permit with completion of the sanitary survey forms is considered equivalent to a sanitary survey and will be counted toward the MPR requirement of completing a survey.

The sanitarian should consider the permit as approved when:

- The final inspection has been made & NCWS is in compliance.
- A satisfactory water well record has been received.
- The analyses indicate the water meets state and federal drinking water standards.
- If the water system is a NTNCWS, a Capacity Development is completed, and a certified drinking water operator is designated.
- SDWIS is updated.

A new NCWS provider that has completed the construction permit process issued by the LHD is exempt from paying the first NCWS Program annual fee after final approval has been received.

5.15 Source Water Protection (SWP) and Source Water Assessment (SWA)

Source water contamination could create potential health problems and cause increased expenses for NCWS. SWP refers to the efforts made by NCWSS to protect their water supply source.

A SWA is a study and report that is unique to each NCWS and provides basic information about the water used to provide drinking water.

Conducting a SWA on each well provided a means to broadly characterize sources with respect to the relative risk of contamination. The assessments were intended to assist owners and regulatory agencies in making decisions affecting NCWS, future sampling, and groundwater protection efforts.

The SWA process was structured to evaluate the degree of natural (geologic sensitivity) protection afforded by the permeability of overlying geologic material like sands, gravels, clays, silts, or rock. Other factors evaluated how the location has been affected by human activities. These factors included well construction attributes (e.g., casing depth, grouting, age, pumping rate); historic water quality results; and proximity to various sources of potential contamination. Potential contamination sources can include septic systems, sewer lines, fuel storage tanks, groundwater contamination sites, floor drains, hazardous waste storage, fertilizer and pesticide storage and use, and storm water runoff. These four factors determined the overall SWA susceptibility score that was reported to each water supplier. Generally, a low SWA score indicates a protected source, and a high score indicates a more vulnerable source.

The well record is one of the most important pieces of information to be used in assessing vulnerability of a supply to sources of contamination. When a well record is not available for a supply installed after this date, the supply owner must obtain a copy of it from the original well drilling contractor. Many current NCWSS were installed prior to 1967 which means that a well log or record may not be available. In addition, the original well drilling contractor may no longer be available to obtain a missing record for wells constructed after 1967. In these cases, the next time maintenance is needed on the well a well drilling contractor should put together a written description of the well depth, drop pipe length, casing depth, screen size, and any other pertinent information.

SWAs have many uses, including:

- ✓ Assist facilities to make decisions on how to protect their drinking water therefore avoiding additional costs associated with contamination.
- ✓ Determine the eligibility for sampling waivers or frequency reductions.
- ✓ Learn to manage contamination sources and try to eliminate old ones.
- ✓ Reduce the risk to human health.
- ✓ Educate the public about protecting their water source.

NCWS with Very High/High Susceptibility SWA Score

A NCWS with a rating of very high or high has a well that is vulnerable and at a greater risk to potential contamination. A NCWS with very high susceptibility may be required to do additional sampling in the future. Many of the NCWS have susceptibility ratings that can be improved with some effort on the part of EGLE, LHD, and NCWS owners. Some actions can be taken to lessen the potential for contamination such as: installing a new deeper or grouted well; properly plugging an unused well; eliminating a potential source of contamination such as a fuel storage tank, a sewer line, or a septic system; or following best management practices.

Although not mandatory at this time, LHDs should address the vulnerability of a NCWS with the owner/operator during the sanitary survey and should highly recommend that actions with a target date are taken to reduce the risk. A high susceptibility score may require revoking a Phase II/V waiver.

Appendix D11, Appendix D11.1 and Appendix D11.2 contain the Worksheet, Instructions and Source Water Protection Guide for Non Municipal Systems.

EGLE Source Water Assessment site:

michigan.gov/egle/0,1607,7-135-3313_3675_3693---,00.html

EGLE Wellhead Protection site:

michigan.gov/egle/0,1607,7-135-3313_3675_3695---,00.html

Chapter 6

Water Quality Standards and Monitoring

Although groundwater is typically a safe source of drinking water and actual events of drinking water contamination are rare, contaminants can enter the drinking water system if any of the protective barriers are breached. Heightened public awareness, concern for public health, and advancements of technology are factors behind legislative action to set national standards regarding the levels of contaminants in drinking water. NCWS staff at LHDs must be familiar with state and federal laws and standards that apply to the NCWSS industry. Water quality monitoring has an important role in identifying breeches in the system that may threaten supplying safe and aesthetically pleasing water to its consumers. However, it is important to understand that a water sample is a very small part of the total water system and not a protective barrier. A water sample is just a “snapshot in time”. One non-detect coliform result does not necessarily indicate that the NCWS is in compliance or free of contaminants.

There are potentially thousands of different contaminants that could find their way into NCWS that may be harmful to health. It is impractical to attempt to test for all possible contaminants. In general, priorities for testing are determined by the USEPA who decides which contaminants to monitor based on national occurrence data, health effects and technology. The USEPA has established standards for more than 90 contaminants that may occur in drinking water and pose a risk to human health.

The contaminants with enforceable standards are also called **Primary Standards** commonly referred to as Maximum Contaminant Levels (MCLs). The [list of primary standards](#) is available through EPA’s website. There are other substances that the USEPA has set **Secondary Standards** based on aesthetic effects only. Secondary contaminants include substances such as iron, manganese, and sulfate. The [list of secondary standards](#) is available through EPA’s website. These are not enforceable; however, they may be used in establishing health advisories as needed.

The types of contaminants that are monitored in the NCWSS program include both **acute** and **chronic** contaminants.

Acute contaminants may have the potential to pose an immediate health risk if consumed. E. coli bacteria and nitrate are examples of acute contaminants that both NTNCWS and *transient* NCWS must monitor. If the NCWSS uses treated surface water or groundwater under the direct influence of surface water (GWUDI) there are additional monitoring and reporting requirements. EGLE policy ODWMA-399-008 Determination of Ground Water Under the Direct Influence of Surface Water (**Appendix F02**) should be consulted in areas of concern. EGLE should be consulted if a system is suspected of being GWUDI.

Chronic contaminants may cause cancer or other ill health effects when consumed at relatively low concentrations over extended periods of time. Examples include arsenic, benzene, and atrazine. Chronic contaminants are monitored only at NTNCWS because the same people are served daily by these systems.

Metals are naturally occurring elements (e.g., zinc, manganese, iron, etc.) in certain geographical locations and may arise from the dissolved solution within natural geologic formations or from the corrosion of metal distribution lines (e.g., lead, copper). Their presence can result in aesthetic issues (metallic taste, rust staining) or if elevated may result in health issues (lead, copper). Metal scans are required for NT facilities.

MCLs are established by the USEPA for regulated contaminants at NCWSS. The MCL is the greatest amount of a particular contaminant allowed in drinking water. MCLs are assigned to primary drinking water contaminants based on scientific research. If a water sample exceeds the MCL, it is a violation of the SDWA and precautionary measures, along with re-sampling, must be conducted at the NCWS. An Action Level (AL) is a contaminant concentration that if reached in a certain percentage of samples requires specified actions by the NCWSS. Lead (Pb) and copper (Cu) are examples of contaminants assigned an AL rather than an MCL. USEPA List of contaminants and their MCLs can be found at water.epa.gov/drink/contaminants/index.cfm

The owner of a NCWS is responsible for making sure all required water samples are collected and reported to the LHD in a timely manner. The owner may delegate the sampling to any qualified person such as a certified

operator. All procedures must be strictly followed when collecting samples and sending them in for analysis. All samples must:

1. Be taken at the proper location using the proper sample bottle.
2. Meet all required testing procedures (preservative, hold time etc.).
3. Be analyzed at a State of Michigan or EPA drinking water certified laboratory.
4. Have the laboratory analysis paperwork fully completed and contain accurate information (date, time, location, PWSID, Source ID etc.).

If the owner or collector of the water samples does not follow proper procedures, the LHD can reject the sample results and require the owner to re-sample. If the required samples are not taken inside the monitoring period, a monitoring and reporting (MR) violation shall be issued.

Sampling requirements are tied to the NCWS classification, population served, source of water, past sample results, vulnerability of the water system, and results of the last sanitary survey. Reduced sampling requirements may be authorized by the LHD if a sanitary survey is conducted at least every five years, the survey demonstrates the NCWS is in compliance with all requirements, the previous monitoring requirements have been met, and water quality history indicates no problems. A completed Phase II/V Waiver form must be in the file and updated every 6 years. Review [section 6.17](#) to determine if a waiver is appropriate.

All correspondence made to the NCWS must be properly documented in the file. Example letters to the owner for failure to monitor, positive bacteriological sample, MCL exceedance, etc. are found in this manual. Any form letter may be changed to accommodate the particular analyte based on sampling requirements, monitoring, etc. Public Notice requirements for health affects language can be found in the SDWA. Check with EGLE before modifying a PN from this manual.

Sources that are aesthetically objectionable but meet the SDWA drinking water standards must be used unless it can be demonstrated the source cannot be used without treatment and such treatment is impractical. In addition, sources meeting the drinking water standards, but available at less than the required peak demand, must also be used unless it can be demonstrated demand cannot be met with storage and re-pump or it is impractical.

6.1 Sampling

All NCWS's are required to sample on a routine frequency for:

Total Coliform bacteria

Nitrates

Nitrites (one time only sample if original sample is non detected)

For NTNCWS using disinfection, sampling for disinfectant residuals and disinfection byproducts is also required.

On a case by case basis, TNCWS may be required to sample for additional parameters if the LHD determines it is necessary for public health reasons.

In addition to coliform bacteria, nitrates, and nitrites, NTNCWS are required to also sample for the following parameters on a routine basis:

Arsenic

Metals

Cyanide

Lead and Copper

Per- and Polyfluoroalkyl Substances (PFAS)

Volatile Organic Chemicals (VOCs)

Synthetic Organic Chemicals (SOCs)

It is recommended that LHD staff correspond with NCWS owners each year to remind them which analytes must be sampled to help prevent MR violations. This may be done via telephone or from a written reminder notice sent via email or traditional mail. Drinking Water Viewer is a web portal which water systems can use to view their monitoring schedules.

6.2 MCL Response

A NCWS with an MCL Violation of any regulated contaminant that falls below the MCL in the next or subsequent quarter, might no longer exceed based on the recalculated RAA. However, that does not negate corrective action required for the initial MCL violation. A NCWS that goes in and out of compliance with the MCL must correct the problem. The authority is Section 15 (1, 2, 4) of the SDWA allowing EGLE and the LHD to require a NCWS to make changes in operations to provide for a continuous adequate supply of water meeting the standard.

6.3 Sampling Location

In general, sampling locations are assigned to each regulated contaminant as stated in the SDWA rules. Where treatment is used, rules often require sampling directly after the treatment before it enters the distribution system. This is called the entry point to the distribution system or the “EP” sample. The LHD staff further designates a specific sample siting plan for all the analytes during the sanitary survey. This sample siting plan must be documented in SWIFT/SDWIS as well as the plan being recorded in the sanitary survey letter to the owner. A specific site example would be “the faucet in the break room” or “the faucet in classroom 204.”

Raw Water Sampling Taps

NCWS are required to provide raw water sampling taps in a convenient location as close to the well as possible. The sampling tap is to be installed before any type of treatment. The raw water sampling tap is used to determine the water quality coming directly from the source. The raw water sampling tap should also be one of the required sampling locations following a total coliform positive sample result.

When doing sanitary surveys, a determination of acceptability of existing sampling taps is required. If there is no raw water sampling tap located at the pressure tank, or the only sampling tap is located close to the floor, the system should be required to install an approved sampling tap. Taps must be located at least eight inches off the floor and down turned. If the installation can be made at waist level the system can then be flushed into a five-gallon pail and sampling is easier. The preferred design should be the small diameter copper goose neck design, or a plain end faucet that provides a smooth flow. If possible, a floor drain should be provided in the vicinity of the sampling tap. This will allow the sampling tap to be thoroughly flushed prior to sampling. The sampling tap should be evaluated regarding the ability to position all required sampling bottles beneath the tap.

For a recently permitted well the raw water sampling tap should be installed at the pressure tank(s). The only exception to this would be an installation where approval was given for a different location. The following are examples of acceptable purposes for locating the sampling tap at locations other than the pressure tank. It is important in all these exceptions to realize the sampling tap cannot be located after a treatment device.

- Approved buried pressure tank; the raw water sampling tap should be in a convenient location as close to the well as possible. This would normally be just after the service line enters the building.
- When a pressure tank is in an acceptable but inconvenient location, such as a crawl space, the sampling tap can be located out of the crawl space and convenient to sample. The additional piping that would be needed should be kept as short as possible.
- Facilities which routinely use chemicals may make it difficult to collect VOC samples. An example would be an industry that paints its product. The paint thinners used in this type of business can cause airborne VOC contaminants during sample collection. It may be judicious to remove the sampling tap from the interior of the building. A possible solution would be to install a short water line to the outside of the building for raw water sampling. EGLE recommends no chemical storage be allowed near the well head/pressure tank, or if it must be stored there that it be placed in secondary containment.

Treated Sampling Taps

When treatment that injects chemicals or treatment for a public health purpose is employed, it is appropriate to sample for these analytes from a treated tap. This entry point (EP) tap is the location after treatment, just before water enters the distribution system. A NCWS may have more than one entry point if it has more than one source of water, though multiple sources may also be joined into a single entry point.

Historically, raw water sampling taps have been selected as the sample location for chronic analytes including arsenic, nitrate, cyanide, metals, VOCs, PFAS and SOCs. This raw water sampling location has been identified as the EP location. If a NCWS has an appropriate sampling tap after treatment, including water softening and

other aesthetic treatment, it may be more appropriate to identify that specific EP sampling location during a sanitary survey rather than the raw water tap.

Distribution Locations

Distribution sample points (DS) should be representative of water that is being consumed from the water system. Coliform bacteria and lead/copper samples are to be collected at distribution system locations. Select taps that are routinely used for drinking. When no drinking water locations are available, select taps that are used frequently and avoid taps where water stagnates for extended periods of time. Review [section 6.7](#) and [section 6.18](#) respectively.

6.4 Lab Results

The EGLE drinking water laboratory electronically reports NCWS results to the LHD. Private labs do not report the results to EGLE database; therefore, it is the owner's responsibility to submit analytical results to the LHD.

Laboratory Certification

All analysis for compliance monitoring as stated in the SDWA must be conducted by a laboratory certified by EGLE for drinking water analysis. Laboratories are certified for analyzing specific contaminants. A certification for one contaminant or group of contaminants does not imply certification for others. Be certain the laboratory selected is properly certified to do the analysis by checking the Certified Drinking Water Laboratories list at [Laboratory Certification Program](#). Costs for the EGLE lab analyses can also be found on the website.

Significant Figures and Rounding

When an analyte has a numeric MCL or AL, rounding is appropriate to determine exceedance when a laboratory report shows more significant figures than are listed in the SDWA. Rounding of 0.5, 0.05, 0.005, etc., will always be upward to the nearest significant decimal point. When confirmation or multiple samples are used to determine compliance, the results as reported will be added first with the laboratory result precision, averaged, and then rounded off to the number of decimal places of the respective standard.

Nitrate example: The MCL of nitrate is 10 mg/L. The MCL does not reference a decimal point. Therefore, any laboratory report listing a nitrate result of 10.1 mg/L through 10.4 mg/L is rounded down to 10 mg/L and is not an exceedance of the MCL. Any laboratory result of 10.5 mg/L through 10.9 mg/L is rounded up to 11 mg/L and is an exceedance of the MCL. If a confirmation sample is collected during a quarter, average the lab-reported results with the decimal and then round the calculated result. (So, an initial result of 10.3 mg/L and a confirmation result of 10.9 mg/L collected during the same quarter would add up to 21.2 mg/L. Dividing 21.2 mg/L by 2 gives 10.6 mg/L which rounds up to 11 mg/L.)

6.5 Sample Siting Procedures

As stated by the Revised Total Coliform Rule (RTCR) and the Lead and Copper Rule (LCR), samples must be collected according to a written sample siting plan. Sampling sites for NCWS are to be determined and recorded on the sanitary survey in accordance with the following procedures:

6.5.1 Raw Water Sampling Tap Location

Identify the raw water tap at the pressure tank or as close to the well as practicable and prior to any treatment. For a recently permitted well the raw water sampling tap should be installed at the pressure tank(s). If a good raw water tap is not available, one should be installed by the NCWS. The raw water tap is required for triggered groundwater rule samples after a routine coliform positive result.

The following are examples of acceptable purposes for locating the raw tap at locations other than the pressure tank. It is important to realize that in all these exceptions the raw tap cannot be located after a treatment device.

- When an approved buried pressure tank is installed. The raw water sampling tap should be in a convenient location as close to the well as possible, this would normally be just after the service line enters the building.
- When a pressure tank is in an acceptable but inconvenient location, such as a crawl space. The sampling tap can be located out of the crawl space at a drinking water related fixture that is convenient to sample.

The additional piping that would be needed should be kept as short as possible. Or a specific sampling tap piping could be installed at the pressure tank but conveniently located near the entrance/outside of the crawl space.

- There are a few facilities which use chemicals that make it difficult to collect VOC samples inside. An example would be an industry that paints its product. The paint thinners used in this type of business can cause airborne VOC contaminants during sample collection. It may be judicious to remove the sampling tap from the interior of the building. A possible solution would be to install a short water line to the outside of the building/chemical storage room for raw water sampling.

When doing sanitary surveys of older NCWS a determination of acceptability of existing sampling taps is required.

- If there is no raw water sampling tap located at the pressure tank, or the only sampling tap is located too close to the floor, they should be required to install an approved sampling tap. The sampling tap should be evaluated regarding the ability to position all required sampling bottles beneath the tap.
- There are other circumstances where a location other than at the pressure tank could be approved. If there is a sampling location that is near the pressure tank, and there is no treatment of the water before the sampling tap, then that location can be approved. A typical example would be an existing water system with a boiler tap at the pressure tank. However, the sampling location is not at an acceptable height. If there is another water fixture, e.g., utility sink within 10-15 feet, then that fixture could be designated as the raw water sampling tap location.

When permitting the installation of a new NCWS or requiring modification of an existing raw water sampling location it is important to educate the owner/person doing the installation about the preferred raw water sampling tap design:

- The 8-inch above the floor height requirement is a minimum. If the installation can be made at waist level the NCWS can then be flushed into a five-gallon pail and sampling is easier.
- The raw water sampling tap should be exactly what it says it is. It is a place to collect water samples representative of the source. The preferred design should be the small diameter copper goose neck design or a plain end (un-threaded) faucet that can be disinfected and provides a smooth/controllable flow.
- If possible, a floor drain should be provided in the vicinity of the sampling tap. This will allow the sampling tap to be thoroughly flushed prior to sampling.

6.5.2 Entry Point (EP) Sample Location

Other than lead and copper, sampling for all chemical contaminants is conducted at the entry point to the distribution system. EGLE has developed the nomenclature of Sampling Station (SS01) in SDWIS to identify the EP sample location.

6.5.3 Sampling Locations for Point-of-Use (POU) systems

Facilities that use POU treatment for public health reasons are required to post “Water Not for Drinking” at all other available outlets. LCR and RTRC routine samples are required to be collected from the POU treatment devices.

6.5.4 Sampling Locations for Disinfection Byproducts (DBPs)

TTHM and HAA5 must be sampled from the distribution system location representing the maximum time water is in the distribution system. Typically, this would be an active drinking water tap farthest from the pressure tank.

6.5.5 Sampling Locations for Disinfectant Residual

For NTNCWS supplies that inject chlorine or chloramines, Rule 719e requires supplies to measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled.

6.6 Monitoring Violations

Monitoring violations are issued by the LHD when a NCWS fails to monitor for a specific analyte within the required monitoring period. Violations are recorded in SDWIS, and notice sent to the NCWS. Generally, when a

NCWS has a monitoring violation, the system no longer qualifies for reduced monitoring until the issue has been resolved. See the sections below for specific analytes.

Monitoring violations warrant a Tier 3 public notice. See [Chapter 7](#) for more information regarding public notice.

When a water supply does monitor for a specific analyte but fails to submit their sample results to the LHD, it is appropriate to issue a reporting violation (**Appendix F08.1**). This provision does not apply to properly labeled samples taken to the EGLE lab.

Over time LHD's have created voluntary compliance methods to lower their monitoring violations rate. See [Section 8.2](#).

6.7 Total Coliform Monitoring

Coliform is a type of bacteria that is used as an indicator of the sanitary quality of drinking water. Coliform bacteria are present in great numbers in human and animal waste, soil, and surface water. The presence of the organism in drinking water indicates potential for other harmful disease-causing organisms having entered the NCWS.

The RTCR is the revision to the 1989 Total Coliform Rule and is intended to improve public health protection. It became effective April 1, 2016. The RTCR establishes a MCL for *E. coli* and uses *E. coli* and total coliforms to initiate a "find and fix" approach to address contamination that could enter the distribution system. It requires NCWS to perform assessments to identify sanitary defects and subsequently take action to correct them. The RTCR also requires seasonal supplies to conduct approved start up procedures and requires assessments of the water supply in certain circumstances.

Routine testing for total coliform is required for all NCWS. Repeat sampling is required when a routine test indicates the presence of the organism. If repeat testing confirms the presence of coliform, an assessment must be performed, and, for systems on quarterly or annual monitoring, an additional 3 routine samples collected the following month. The presence of *E. coli* or fecal coliform is a more serious situation than the presence of total coliform alone. *E. coli* or fecal coliform presence indicates that human or animal fecal material has contaminated the water system and any ingestion of this water poses a serious health threat. The water must not be consumed in any way.

Coliform samples are a very small snapshot in time of the NCWS microbial water quality. Total coliform positive samples must not be discounted but viewed as a signal of possible contamination.

If a total coliform positive result is not cleared up after a registered well driller disinfects the well, some labs may be able to speciate the organism to obtain a better treatment control option.

6.7.1 Coliform Monitoring Frequency

Sampling requirements are tied to population served, source of water, and results of the sanitary survey. Samples are to be collected at drinking water taps routinely used for drinking. A specific sampling site plan is established during the survey and special monitoring evaluation. The sampling siting plan shall be documented in the sanitary survey letter and the database.

The LHD must determine the appropriate monitoring schedules for all groundwater systems serving 1,000 or fewer people by performing a special monitoring evaluation each time a sanitary survey is conducted at the NCWS.

New NCWS using only groundwater and serving 1,000 persons or fewer shall monitor on a quarterly basis. New seasonal NCWS must monitor monthly. If, at any time, a MR violation or a MCL occurs, water quality history must be re-established and increased sampling frequency, such as quarterly or monthly sampling, must occur.

NCWS serving more than 1,000 persons per day must monitor monthly as a like-sized CWS.

Table 6-1 Total Coliform Monitoring Frequency for year-round NCWS

Population Served	Samples per Month	Population Served	Samples per Month
25 to 1,000	1	5,801 to 6,700	7
1,001 to 2,500	2	6,701 to 7,600	8
2,501 to 3,300	3	7,601 to 8,500	9
3,301 to 4,000	4	8,501 to 12,900	10
4,101 to 4,900	5	12,901 to 17,200	15
4,901 to 5,800	6	17,201 to 21,500 ²	20

²Facilities over 21,500 use the Total Coliform Monitoring Frequency for Community Water Supplies in the SDWA, Rule 705.

In determining the population served, the following guidance from the USEPA is used:

The number of residential consumers plus the average of the number of regular consumers served, per day, during a month plus the average of the number of transient consumers served, per day, during a month.

Procedures for increasing or decreasing the frequency of Total Coliform sampling are outlined in **Appendix F04**.

- When NCWS are identified as serving more than 1,000 persons per day
- New wells or existing NCWS are added to the inventory
- When total coliform MR violations occur
- After an inconsistent sample history
- At the time of a sanitary survey (based on findings)

Notices reminding the NCWS to collect routine samples on time may help reduce MR violations. Reminder notices may be generated from WT. A sample letter can be found at **Appendix F05**.

6.7.2 Coliform Sample Locations

Identify at least one routine sampling tap (DS01) representative of distribution water quality where water is frequently used for consumption, such as a kitchen, drinking fountain, break room, or similar location.

Identify repeat bacteria sample locations based on Rule 704c.

1. the same location as the routine bacteria location,
2. one location upstream (within 5 service connections), (DS02)
3. one location downstream (within 5 service connections), (DS03)
4. a triggered groundwater sample from the raw water tap of each well in operation.

6.7.3 Coliform Monitoring Violations

Failure to monitor for appropriate water quality parameters is a violation of the SDWA. If the NCWS fails to monitor as required, the NCWS is to be regarded as having “unknown water quality” and may be considered to be “unsafe” until proven otherwise and the supplier is required to provide public notice as such (see [Chapter 7](#) for public notification). **Appendix F05** is an example correspondence to the NCWS regarding a failure to monitor. Multiple coliform monitoring violations may result in increased frequency, see [Section 6.7.8](#) Assessments for details.

Make Up Samples

The LHD may elect not to count a monitoring violation in determining whether a transient water supply should remain on quarterly monitoring if a make-up sample is collected no later than the end of the quarter following the monitoring period in which the sample was missed. Similarly, the LHD may elect not to count a monitoring violation in determining whether a transient water supply on monthly monitoring should qualify for quarterly monitoring if a make-up sample is collected no later than the end of the month following the monitoring period in which the sample was missed. The supply shall collect the make-up sample in a different week than the routine sample for that month or quarter and should collect the sample as soon as possible during the monitoring period. This provision does not negate the monitoring violation and reporting to EPA, it simply offers an alternative to calculation of clean compliance history.

6.7.4 Seasonal Supplies

A seasonal NCWS starts up and shuts down at the beginning and end of each operating season. This operation presents additional opportunities for contamination to enter or spread through the distribution system. The RTRC

requires that seasonal NCWS demonstrate completion of a state-approved start-up procedure. The [Seasonal Public Groundwater Supply Handbook](#) is available for operators of seasonal NCWS.

The LHD shall determine if a NCWS is classified as seasonal using the [Seasonal Supply Determination Chart for Noncommunity Public Water Supplies](#) (**Appendix F21**). A school is not typically considered a seasonal supply.

Certification that the approved start-up procedures have been completed and the water is safe for public consumption is to be completed by the owner or a person designated by the owner each year. EGLE Seasonal Start-Up Certification and Procedures Form is available as **Appendix F23**. The owner is ultimately responsible for submitting the certification and providing safe drinking water.

There are nine start-up tasks required for all seasonal supplies to complete prior to opening to the public:

1. Evaluate the wellhead and surroundings.
2. Evaluate the water system.
3. Evaluate for cross connections between the water system and sources of contamination.
4. Inspect air gaps and backflow preventers.
5. Test backflow assemblies.
6. Flush the supply.
7. Disinfect any depressurized portions of the supply.
8. Obtain at least two pre-opening non-detect bacteriological samples, collected 24 hours apart, according to the sample siting plan.
9. Certify and submit the completed start-up certification form and water sample test results to the LHD **prior to opening to the public**. Any deficiencies observed should be corrected and details of the work performed should be provided to the LHD with the certification.

Seasonal supplies that fail to complete all 9 tasks should be issued a treatment technique violation. (See [section 6.6](#).) If a system completes the tasks but fails to submit the form before opening, they should be issued a reporting violation.

Policy Approved Methods to Winterize Distribution Piping (DWMAD-399-030)

Noncommunity water supplies (NCWS) that close for the winter without heat must protect their distribution system pipes from freezing. Most often, the pipes are winterized by draining and then blowing out the pipes with pressurized air. In some cases, this method cannot easily or inexpensively be done because of the way the system is constructed. In addition, some community water supplies (CWS) shut down a portion of their distribution system or have customers who close for the winter and are unable to drain their pipes.

As of the date of the policy (**Appendix F22.1**, there is no antifreeze available that is certified as meeting the NSF/ANSI Standard 60: Drinking Water Treatment Chemicals. The Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), requires that all chemicals used in drinking water treatment meet NSF/ANSI Standard 60. This policy/procedure allows for the use of a pharmaceutical or food-grade propylene glycol antifreeze as an alternative to dewatering when it is technically and economically necessary.

Routine Monitoring Seasonal Systems

All seasonal NCWS serving less than 1000 people per day must conduct quarterly routine monitoring for all months they are in operation. Routine total coliform samples shall be collected during the vulnerable period. A new seasonal system shall begin on monthly bacteria frequency for a period of not less than 12 months of operation.

It is important for both the NCWS and the regulatory agency that any increase or reduction in monitoring frequency be documented. Documentation should be done both on paper and electronically. There are multiple ways to document the current monitoring frequency:

- Sanitary survey letter citing compliance and good sampling history.
- Follow-up inspection compliance letter.
- Specific letter informing owner of reduction and citing compliance and good sampling history. (**Appendix F09**)
- A routine water sampling reminder summarizing the NCWS sampling requirements.

Closing with an MCL

If a seasonal NCWS ended the year with an unresolved E. coli MCL violation, during start-up operations the NCWS must follow the corrective action plan and obtain a minimum of two coliform non-detect samples at least 24 hours apart. The NCWS shall be placed on monthly routine frequency for a minimum of 12 months of operation. An SO7 violation code should be entered in the WT database violations section at the end of the season. The SOX code is to be used when the MCL violation is resolved.

Seasonal facilities that receive a routine total coliform positive result, even if it is at the end of their operational season, must collect 4 repeat samples before shutting down their water supply system. If the four samples are not collected before shutting operations down, they must be collected before opening the next season, even if the NCWS is chlorinated prior to opening.

6.7.5 Total Coliform Positive Samples

The flowchart in **Appendix F10** “Response to Total Coliform Positive Results” shows the procedure LHD staff needs to take when a routine sample is positive for coliform. E. coli positive results follow **Appendix F19**.

Upon receiving one total coliform positive water sample result, it is the NCWS responsibility to comply with the re-sample requirements of the SDWA.

As soon as possible the LHD should:

- ✓ Review bacteriological sample history
- ✓ Contact owner/operator to discuss possible causes, recent changes, well damage, observable water quality changes such as taste, color, odor, etc.
- ✓ Confirm the requirement for owner/operator to collect repeat samples within 24 hours and review sampling location and protocol.

This can be verbal or written and must be documented. This “minimum” response is not intended to limit the ability of regulatory staff to take additional action if they believe it necessary to protect public health.

As directed by the sample siting plan, one of the repeat samples must be from the same sample tap as the original positive sample. Two additional samples shall be from the distribution system within 5 connections (upstream and downstream) from the positive result. If a NCWS does not have faucets that meet these criteria, the sanitarian should create a sample siting plan the best meets the intent of the rule. These samples are to be labeled as “repeat” samples on the laboratory form.

An additional sample must be collected at the raw water tap of each well that was running at the time of the routine positive. Failure to take a raw water sample is a violation of the Groundwater Rule and must be reported in SDWIS. A violation notice must be sent to the water system which includes a tier 3 public notice.

Failure to collect all required repeats in a timely manner triggers a Level 1 assessment (or a Level 2 assessment if a Level 1 assessment in previous 12 months). **Appendix F12** is the letter to be used for a NCWS that fails to collect coliform repeat samples.

For systems on quarterly or annual monitoring, 3 additional routine samples are required to be collected in the month following the initial positive sample. These samples should be labeled as “routine” samples on the laboratory form. The three samples may be collected on the same day if at different drinking water sites. If there are not enough drinking water locations, the samples must be collected at different days in the month. If the three samples are non-detect for coliform bacteria and the LHD determines the NCWS to be in compliance the NCWS resumes routine quarterly or annual sampling frequency.

The “Tracking Form for Noncommunity Public Water Supply Total Coliform Positive Sample Results” found in **Appendix F14** may be helpful in documenting the sample results and chronology of events.

6.7.6 E. Coli or Fecal Positive Routine or Repeat Sample

An E. coli positive result from an active NCWS requires the owner to collect repeat samples within 24 hours of notification (*Rule 707 (1)*). The following are minimum actions to be taken by the LHDs or EGLE NCWS program staff where appropriate upon notification of the positive E. coli result (see **Appendix F19** flow chart).

1. Within **24 hours** or the end of the next business day of notification
 - ✓ Review bacteriological sample history

- ✓ Contact owner/operator to discuss possible causes, recent changes, well damage, observable water quality changes such as taste, color, odor, etc.
 - ✓ Confirm the requirement for owner/operator to collect repeat samples within 24 hours and review sampling location and protocol.
 - ✓ Written correspondence following an E. coli positive is recommended. **Appendix F19.1** is an example letter.
2. Within **72 hours** of notification of an E. coli positive sample
- ✓ Contact the owner/operator and conduct a site visit if warranted. Evaluate the NCWS potential for contamination, assess the repeat sample results as available, and the implementation of precautionary measures if required following initial contact and investigation.

E. Coli or Fecal Coliform MCL Violation

Table 6-2 Coliform MCL Violation Determination

Routine Sample	Repeat Sample
E. coli positive	Total coliform positive
E. coli positive	Any missed repeat sample
Total coliform positive	E. coli positive
Total coliform positive	Total coliform positive (no E. coli analyzed)

Minimum requirements following an E. coli MCL violation. An MCL violation occurs after repeat sample results (or failure to collect repeat samples) confirm the presence of coliform bacteria.

- ☐ Contact EGLE NCWS staff person assigned to your agency
- ☐ Public Notice

The owner is required to post notice with required language where water is consumed. Parents/guardians are to be notified if consumers are children. List the restrictions on use of water as appropriate. A copy of signed notice is to be returned to LHD for verification. If there is a licensing agency responsible for overseeing the NCWS, the LHD staff must notify the agency. (**Appendix F19.2** is an MCL example letter. Public posting examples are found in Chapter 7's **Appendix G**.)
- ☐ Precautionary Measures

An approved alternate source of water (typically bottled water) must be provided by the supplier for potable use as indicated in the public notice. The LHD has the discretion to determine the appropriate means to prevent exposure to E. coli contaminated water based on the type of NCWS and populations served. Additional measures may be necessary including providing alternate means of hand washing, suspension of food preparation, etc. If the agency determines the continued operation would put public health at risk, closure can be ordered.
- ☐ Level 2 Assessment

Review the last sanitary survey to check whether there were any deficiencies that are not corrected. If there were no deficiencies, the L2 assessment may reveal the cause of the MCL violation. The LHD should require all deficiencies to be corrected, or otherwise make recommendations, and establish a standard 10 day compliance schedule. The L2 form is completed in SWIFT. An example Corrective Action Plan is **Appendix F13.2**.
- ☐ Monthly Monitoring

The supply must be placed on monthly monitoring for a minimum of 12 months. The LHD may reevaluate the water supply after 12 months to see if reduction in sampling is appropriate.

EGLE staff will review records for NCWS with E. coli positive samples at annual evaluations.

6.7.7 Failure to Collect Repeat Samples After Positive Routine Results

If the owner/operator does not collect all required repeat samples after a routine total coliform positive result, the water source has not demonstrated to be safe and the NCWS has triggered an assessment.

Table 6-3 RTCR Violation Determination Based on Monitoring

Action	Monitoring Violation	E. coli MCL Violation	Assessment Trigger
Fails to collect routine samples	Yes	No	No
Fails to analyze E. coli when a routine is TC positive	Yes	No	No
Fails to collect repeat following a routine TC Positive	No	No	L1 L2 if a L1 in previous 12 months
Fails to collect all repeat samples following a routine E. coli positive	No	Yes	L2
Fails to analyze for E. coli when a repeat is TC positive	No	Yes	L2
Fails to collect additional routine samples following a trigger	Yes	No	No

POTENTIAL IMMINENT HEALTH HAZARD

Nothing in these procedures limits the ability to take more immediate or stringent action to protect public health based upon information or observation of conditions of an imminent health hazard. This could mean immediate precautionary measures (bottled water and public notice) or in severe cases requesting closure. In most cases, voluntary compliance with precautionary measures can be obtained; however, Section 15, 325.1015 of the SDWA provides authority to take such action where an MCL has not been established if it is believed an imminent health hazard exists.

6.7.8 Assessments

The RTCR includes requirements to investigate the NCWS and correct sanitary defects found when monitoring results show the NCWS may be vulnerable to contamination. Assessments are required to be conducted within 30 days following unsafe sample results or failure to collect repeat samples. An assessment of the water supply includes an evaluation of the following:

- ✓ Unusual occurrences prior to sampling
- ✓ Changes to the water system
- ✓ Sample site/sampling protocol
- ✓ Wellhead
- ✓ Treatment process, if applicable
- ✓ Pressure tank
- ✓ Distribution system

A Level 1 Assessment (L1) is an evaluation of the water supply made by the well owner or operator and is triggered by either: failure to collect every required repeat sample following a routine total coliform positive or two or more total coliform positive samples in the same month. The L1 form is **Appendix F13** and can be found on EGLE NCWS website. If an LHD conducts a L1 over the phone the supply must be sent a copy of the completed form.

A Level 2 Assessment (L2) is a more in-depth evaluation of the water supply made by the LHD and is triggered by either: an E. coli MCL violation, a second L1 in a rolling 12 months, or second L1 in 2 consecutive years for systems on annual monitoring. The L2 is completed in SWIFT. A copy of the completed L2 must be sent to the supply after completion. If a system triggers multiple L2 within 12 months, consult your EGLE representative. The system will continue to trigger L2 assessments until 12 months of clean compliance (no bacteria triggers and no MR violations).

Any triggered assessment shall complete a corrective action plan. A Corrective Action Plan template is **Appendix F13.2**. Historical partial chemistry results may be included when completing the L2 to show changes in water system characteristics.

6.7.9 Disinfecting After a Single Positive

Water systems that disinfect their water supply system after a single positive coliform sample may be in violation if they do not collect repeat samples within 24 hours of notification of the original positive result. The system must be flushed until all chlorine residual is absent and four repeat samples collected before resuming operation.

The disinfection procedure must be completed by a registered water well driller, pump installer or a Michigan licensed master plumber. Owners/operators of NCWS are not authorized in Part 127 of Act 368, Ground Water Quality Control to chemically treat a well. D level limited treatment operators are certified for disinfection of NCWS distribution systems. This means treatment of the water prior to entry into the distribution system and does not allow them to conduct activities defined as well drilling. Under Rule 106 (4) (h) chemical treatment of a well is listed as a well drilling activity.

6.7.10 Invalidation of Total Coliform Samples

Invalidation of sample results or waiving monitoring requirements must be documented in accordance with rules 707 (7)(8)(9), and 707a. While the original total coliform positive sample result can be invalidated, there is no mechanism to waive the repeat samples required in Rule 707(1). All repeat samples must be collected or the NCWS will trigger an L1.

Rule 325.10707a (3) states A total coliform positive shall not be invalidated solely because all repeat samples are total coliform negative (or non-detect).

A sample invalidated by the laboratory does not count towards monitoring requirements and a replacement sample is required. Bacteria samples received at the lab over the 30 hours hold time shall never be accepted for compliance purposes. The state lab will report this time lapse in the comments section. It is unclear if all private labs report this time lapse, but the LHD should be on the lookout for these and require a re-sample.

6.7.11 Postponement Waiver

Following an L1 trigger event, it is possible to postpone the additional routines when a resolution to the bacteria contamination is still being pursued. The LHD may choose to allow a supply on annual or quarterly monitoring more time to correct the problem if the following conditions are met:

1. The supply successfully collected all required repeat samples following a routine positive sample
2. A cause of the bacteria contamination has been identified
3. The supply has been working diligently to correct the problem
4. An in-depth review of the L1
5. LHD approved corrective action plan
6. Documentation of the decision to grant a postponement waiver using **Appendix F20**

The postponement may not extend longer than two months after the month the additional routine samples were originally due.

6.8 Coliform Treatment Technique Violations

A treatment technique (TT) violation occurs when the NCWS fails to act or respond as required by the LHD or by EGLE. TT violations require the NCWS to provide public notification to its customers.

Coliform

A coliform treatment technique violation occurs when one of the following occurs:

- ✓ Failure to conduct a Level 1 Assessment within 30 days of a trigger.
- ✓ Failure to correct all sanitary defects within 30 days of an assessment trigger.
- ✓ Failure of a seasonal NCWS to complete state-approved start-up procedures prior to serving water to the public.

Appendix F30: TT cover letter that can be used with public notice

Appendix G20-23: TT public postings

NCWS who have triggered into increased monitoring and request reduced monitoring must not have any TT violations in the past 12 months of operation, which may last multiple calendar years. TT violations must be closed out with a return to compliance date.

Significant Deficiencies

A groundwater supply subject with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the department) of receiving written notice from the department of the significant deficiency, either of the following conditions exist:

- (a) The groundwater supply does not complete corrective action under any applicable department plan review processes or other department guidance and direction, including department specified interim actions and measures.
- (b) The groundwater supply is not in compliance with a department-approved corrective action plan and schedule.

Subpart H Systems

Systems using complete treatment that exceed the turbidity level shall receive a TT violation.

6.9 Loss of Pressure

When a loss of system pressure occurs within the distribution system, the appropriate regulatory action may vary based on whether it is an individual NCWS or many NCWS. The object is the same in all situations; to prevent consumption of water that could be contaminated. If system pressure falls to zero, there is a much greater likelihood the NCWS could be subject to cross connection contamination. Also, buried water lines are susceptible to possible intrusion of surface or near surface water when pressure is lost. LHD personnel should also consult with any licensing agency such as campgrounds, food service, and childcare centers that may also be involved with the effected NCWS.

The following minimum precautions are required of the owner of a NCWS when water service is restored:

- ✓ Provide bottled water for consumptive uses
- ✓ Provide public notice to not consume the tap water (**Appendix G07**)
- ✓ Disinfect and flush the water system thoroughly
- ✓ Collect at least 2 water samples 24 hours apart indicating the absence of coliform bacteria
- ✓ Obtain approval to resume consumption of the water from the LHD

R325.11207, Rule 1207, SDWA, if an interruption in water service to the distribution system occurs due to a failure in the source of supply, the water shall be disinfected in a manner approved by EGLE and compliance with the state drinking water standards shall be demonstrated by additional bacteriologic monitoring.

Water pressure disruptions for one or a few facilities can be dealt with individually as opposed to an area or regional power disruptions that affect hundreds of NCWS. Procedures may vary somewhat depending on the situation.

1. Individual NCWS Loss of Water Pressure

If a NCWS stopped using water upon losing power and maintained pressure above 20 psi, there may be no need to implement precautionary measures. If the NCWS continued to use water, pressure tanks would likely empty, and pressure would be lost in the distribution system. If the NCWS lost pressure for any extended period, precautionary measures are to be implemented. Disinfection of the system shall be required when loss of pressure occurred or is suspected to have occurred.

2. Area Wide Loss of Water Pressure

If it is not possible to individually assess every NCWS, a general notification via phone, print, or media announcement may be necessary to inform public water supplies about required procedures. In these situations, is not appropriate to make a general advisory to disinfect the impacted NCWS. This is because of the likelihood that untrained individuals would add chemicals to the NCWS causing additional public health and safety concerns.

3. Emergency Response Plan

The emergency response plan form is part of the Capacity Development requirement for new NTNCWS, but it can be used for any NCWS to prepare them for disruptions in water service. Implementing an emergency action plan for all NCWS is a recommendation not a requirement (**Appendix E05.2**).

6.10 Nitrate and Nitrite Monitoring

The MCL for nitrate is 10 mg/L and the MCL for nitrite is 1.0 mg/L. A combined result of 10 mg/L is also an MCL violation.

Nitrate (NO_3) is an inorganic chemical and a form of nitrogen combined with oxygen. It can be converted in the body to Nitrite (NO_2). Nitrate can get into water if a well is improperly constructed or located where it is subject to contamination sources. Typical sources of nitrate include sewage disposal systems, run-off from barnyards or fertilized fields, industrial wastes, or nitrates that are naturally occurring in the soil, as found in some parts of Michigan.

Large amounts of nitrate in drinking water are a cause of a disease called Methemoglobinemia (blue baby syndrome), a blood disorder primarily affecting infants less than six months of age. Excessive levels of nitrate in drinking water may indicate potential for the presence of other types of contaminants that may cause health problems.

Groundwater NCWS must collect one nitrate sample per year. Surface water sources must collect nitrate samples quarterly at least for the first year, then annual if results are below 0.5 mg/L.

All NCWS must collect at least one nitrite sample. If nitrite results are less than 0.5 mg/L, the NCWS is waived from further Nitrite testing.

Suppliers of groundwater shall take at least one sample at every POE to the distribution system representative of each well after treatment. A typical NCWS does not have treatment and therefore a source water sample analysis is required at the raw water sample tap which is typically the sample tap closest to the pressure tank.

A specific sample siting plan is established during the survey and documented in the sanitary survey report and the database.

The acceptable sample hold time prior to analysis for a nitrate sample is 48 hours after collection (however, the sample should be delivered to the lab promptly after collection). Therefore, it is important to know mailing options and laboratory schedules to ensure samples are delivered and analyzed within the hold times.

Nitrate/nitrite samples need to be at or below a specific temperature when received at the lab. Samples that do not meet the temperature requirement cannot be accepted for compliance purposes. Samples received within 24 hours after collection will be accepted if they are packed in ice. Samples not on ice will not be accepted for compliance. If you see a comment on your sample result indicating temperature requirements were not met, a new sample should be collected as soon as possible to avoid a monitoring violation.

The LHD is to issue a MR violation if the supplier fails to collect samples during the monitoring period. An example MR violation letter is **Appendix F07**.

If nitrate or nitrite results exceed 5 mg/L or 0.5 mg/L (50% of MCL) respectively, quarterly sampling is required for NTNCWS for a minimum of one year. The sampling frequency for groundwater systems may be reduced by the department to annually after 4 consecutive quarterly samples are reliably and consistently less than the MCL and samples do not show an upward trend. If a reduction to annual frequency is granted, the NTNCWS should be directed to collect the nitrate sample during the quarter with the highest quarterly result. **Appendix F15.2** may be used to inform the NCWS of the increase in monitoring frequency. EGLE recommends increasing the frequency of TNCWS also.

6.10.1 Nitrate MCL Response

If a nitrate or nitrite sample result exceeds the MCL, a confirmation sample shall be taken within 24 hours of the notification of the results exceeding the MCL. Failure to collect the confirmation sample warrants issuance of the MCL violation (**Appendix F51**) and a Tier 1 public notice (**Appendix G05**).

The calculated average of the 2 sample results is the value used to determine if the NCWS has exceeded the MCL. The MCL does not reference a decimal point. Due to a rounding effect, a sample result of 10.4 mg/L would not exceed the MCL (10 mg/L), but a result of 10.5 mg/L would exceed the MCL.

When an MCL violation has occurred, the NCWS should begin an investigation to find a permanent alternative source that meets the drinking water standard. Replacing the source is the correct public health action to solve the problem and thus is the first step to return to compliance.

If the calculated two sample average exceeds the nitrate/nitrite MCL, the following procedures must be taken:

1. Public Notification is required. See [Chapter 7](#) for details on Public Notification and **Appendix G05**.
2. NCWS to seek an alternate source meeting the SDWA standards.
3. Interim precautionary measures for providing access to an alternate source (inclusive of bottled water) are to be made available.
4. The LHD is to issue a MCL violation letter (**Appendix F51**). Nitrate MCL is not calculated as a “running annual average”. Running annual average is used for arsenic. Additional sampling events cannot count when calculating the MCL exceedance.

The following alternate source options may be evaluated when a NCWS exceeds the nitrate MCL.

➤ Drill a new well

Most nitrate MCL violations are resolved by drilling a new well into another formation or at least deeper in the existing formation to obtain water that meets the standard. Well permits issued in areas of high nitrate must identify elevated nitrate as a concern and should recommend field testing for nitrate during the construction process as a means of locating a source that is nitrate free or one with consistently low nitrate levels. Proper construction and grouting are also critical. The purpose of field-testing during construction is to attempt to find the lowest nitrate source available prior to completing the well. Some sources produce a wide seasonal variation in nitrate levels and in some areas nitrate levels are increasing. Finishing a well with nitrate levels marginally below the MCL without determining if nitrate levels at lower levels can be obtained, may result in the owner drilling another well in a relatively brief period if the nitrate levels are exceeded again.

➤ Continuous Permanent Public Notice Posting

Supplies with nitrate levels that do not exceed 20 mg/L may be allowed to remain in use if the supplier demonstrates all the following:

- Such water will not be available to infants less than 6 months of age.
- There will be continuous posting of the fact nitrate levels exceed 10 mg/L and the potential health effects of exposure.
- LHD and EGLE public health authorities will be notified annually of nitrate levels that exceed 10 mg/L.
- No adverse health effects shall result.

A supply may be allowed to operate under continuous posting only after extensive consultation and approval from EGLE. Continuous posting is not applicable in facilities where the public has unrestricted access to drinking water. For example; a public park, amusement park, racetrack, concert venue, rest area, shopping mall, schools, daycare centers, etc., The availability of water to infants less than of 6 months old cannot be restricted and posting would not be a reliable means to prevent exposure.

To obtain approval, facilities proposing to implement continuous posting must be able to permanently affix a durable posting at all outlets available to the public, provide a plan to assure that infants less than the age of 6 months will not be exposed, and assure any who request it will receive bottled water meeting drinking water standards.

If using continuous posting, the violation must be updated with the proper violation maintenance coding. The MCL violation should be SOX'd and an SO6 code should be added to explain the NCWS is now on continuous posting. An annual treatment surveillance visit must be conducted by the LHD for systems with approved continuous posting (11.3 Treatment Surveillance Visits).

➤ Treatment

If no alternate source is found and continuous posting is not an option, treatment may be considered. See [Chapter 11](#) for details on application and requirements for treatment conducted at NCWS.

➤ Water Hauling

If no alternate source may be found, continuous posting and treatment is not a viable option, the NCWS may consider a hauled water option. See [Chapter 12](#) for details on licensed water haulers.

- Plans, specifications, and an operational manual shall be submitted and approved by LHD in conjunction with EGLE noncommunity program staff.
- Use of an EGLE approved source and contracting with an EGLE licensed water hauler is required.
- A chlorine residual (0.5 - 1.5 ppm) must be maintained in the hauled water.
- Submit MORs to the LHD with a minimum of weekly chlorine residual testing and a minimum of quarterly bacteria sampling frequency.
- Quarterly nitrate sampling frequency.

6.11 Arsenic Monitoring

At the levels we normally see in drinking water in Michigan, arsenic is a chronic, not an acute contaminant. The 0.010 mg/L standard is based on a lifetime exposure (70 years) consuming 2 liters of water per day.

Sampling Sites

Samples are to be collected at every POE to the distribution system representative of each well after treatment. A typical NTNCWS does not have treatment and therefore a source water sample analysis is obtained at the raw water sample tap closest to the pressure tank. If the NCWS is treating for arsenic removal, a routine sample is to be taken in the distribution system after the arsenic treatment device.

A specific sample siting plan is established during the survey and documented in the sanitary survey report and the database.

New Sources

Permits for a new NTNCWS in an area of elevated arsenic should contain appropriate conditions regarding obtaining water meeting the arsenic standard, field testing recommendations, and requirements for obtaining approval prior to installation of any arsenic removal treatment. The following is example well permit language that may be used or modified to reflect site specific information such as a casing depth recommendation or targeting a specific aquifer, as appropriate.

If the proposed well is in an area where arsenic may be present in the groundwater at levels exceeding the drinking water standard of 0.010 mg/L, the NCWS is required to meet the arsenic standard prior to use by the public. Arsenic testing with an accurate field test kit is recommended to assess the water quality during the construction process. If arsenic meeting the standard cannot be obtained, an approved treatment system will be required prior to use by the public.

Some flexibility could be allowed on a case by case basis for new NCWS to begin operation, but it would be with conditions and timelines specified in a bilateral compliance agreement (BCA). An example might include operating for a brief period until treatment is installed. In that case, there would have to be approved plans and timelines in place. Bottled water could be required in the interim as a condition of operation and public notice would be required. If a supplier proposed to begin operation without meeting the arsenic standard, EGLE must be consulted before considering approval through a BCA or other enforcement mechanism.

Monitoring

After an initial result of 0.005 mg/L or less, with no history of elevated arsenic, the monitoring frequency can be reduced to 1 sample every 3 years.

NTNCWS with results exceeding 0.010 mg/L are required to collect 4 consecutive quarterly samples to determine the RAA. If the RAA is below the standard, the ongoing monitoring frequency is based on the need to determine that results are reliably and consistently below the standard. An example letter requiring an increase in monitoring is **Appendix F61**.

Water supplies that use POE arsenic treatment must sample the treated water quarterly on a permanent basis. However, supplies with POU reverse osmosis or arsenic adsorption media cartridge filters may be allowed a reduction in the arsenic sampling frequency to semiannual (one sample every 6 months) if the treatment system has at least one year of quarterly compliance sampling of the treated water that is below the MCL. Water supplies

with arsenic treatment are not required to sample the raw water before treatment but sampling this untreated water every 3 years is encouraged.

MR Violation

If a MR violation occurs, a monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is reestablished. The LHD is to issue a MR violation. An example MR violation letter is in **Appendix F07**.

Calculating the RAA to Determine MCL Violation

The RAA is rounded to the nearest regulatory decimal place to determine compliance. For example, a RAA of 0.01049 mg/L is rounded down to 0.010 mg/L and complies whereas a RRA of 0.01050 mg/L is rounded up to 0.011 mg/L and is out of compliance. To determine the RAA, add together the last 4 quarterly compliance samples and divide by 4. If more than one sample is collected in a quarter, the samples for the quarter are averaged to obtain one result for the quarter and that result is averaged with the remaining quarters. When the 5th sample is collected in the first quarter of the next year, that result is averaged with the previous 3 quarters and the result from the 1st quarter for the previous year is dropped from the calculation and so on. Field test results are not required and shall not be used in determining compliance with the MCL. If the NCWS owner elects to analyze samples monthly at a certified lab, the multiple certified lab results for a quarter are averaged first and then the four quarters are averaged to determine the RAA. EGLE Policy ODWMA 399-020 (**Appendix F63**) should be consulted regarding Arsenic Treatment Systems and compliance with the MCL.

6.11.1 Arsenic MCL Response

The MCL is not exceeded until the average of 4 quarters is greater than 0.010 mg/L. If the owner fails to collect any quarterly samples, the RAA is based on the last 4 quarters sampled. Do not use zero as a result for the missed sample.

Rule 604c (2) of the SDWA states, “If 1 sampling point is in violation of the MCL, then the water supply is in violation of the MCL.” Therefore, if the NCWS has more than 1 POU treatment system, sample results from each system must be tracked separately. If the RAA from any treatment system is above the MCL, the NCWS is in violation of the arsenic MCL.

Public notice posting is required as soon as possible but not later than 30 days after an MCL violation occurred. Contact your EGLE NCWS program staff member for consultation when an arsenic MCL violation occurs.

A NCWS with an RAA over 0.010 mg/L that falls below the MCL in the next or subsequent quarter, might no longer exceed based on the recalculated RAA. However, that does not negate corrective action required for the initial MCL violation. A NCWS that goes in and out of compliance with the MCL must correct the problem. The authority is Section 15 (1, 2, 4) of the SDWA allowing EGLE to require a NCWS to make changes in operations to provide for a continuous adequate supply of water meeting the standard.

Sample Invalidation

If a sample result is clearly out of range (very high or very low) considering the sample history and sample location, the LHD can require a confirmation sample. Technically, the results of confirmation samples must be averaged with the original result. However, if there is a clear indication the original sample is not reflective of the raw water quality, contact your EGLE district staff person to discuss the situation. If there is a case for invalidating the sample (other than by the laboratory) it must be approved and documented by EGLE staff.

Treatment

A permit is required prior to construction or alteration of a NCWS, including the installation of treatment to meet drinking water standards. See [Chapter 11](#) for details on application and requirements for treatment conducted at NCWS.

6.12 Cyanide Monitoring

The MCL for cyanide is 0.2 mg/L. In Michigan, cyanide is typically not naturally occurring above the MCL, and a reduced monitoring frequency is common.

Sampling Sites

Samples are to be collected at every POE to the distribution system representative of each well after treatment. A typical NTNCWS does not have treatment and therefore a source water sample analysis is required which is obtained at the raw water sample tap.

A specific sample siting plan is established during the survey and documented in the sanitary survey report.

Monitoring

Initial monitoring for new NCWS or new wells at existing facilities is required before approval. A NCWS may be subsequently reduced to 1 sample every 3 years based on no detects and low vulnerability as determined by a sanitary survey.

After 3 rounds of 1 sample per 3 years (9 years total) a reduction to 1 sample every 9 years can be made in accordance with R 325.10710(5) if no cyanide has been detected.

MR Violation

If a MR violation occurs, the monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is reestablished. The LHD is to issue a MR violation. An example MR violation letter is in **Appendix F07**.

6.12.1 Cyanide MCL Response

Where the results of sampling for cyanide indicate a concentration that is more than the MCL, the department shall require the NCWS to collect one confirmation sample as soon as possible after the initial sample was taken, but not more than two weeks later. If the cyanide MCL violation is confirmed, the NCWS must go to a quarterly sampling frequency. The MCL is then determined after one year of quarterly sampling using an RAA (SDWA Rule 604c(2)(b)). Contact your EGLE NCWS program staff for consultation when a cyanide MCL violation occurs.

6.13 Inorganic Monitoring

Sampling Sites

Suppliers of groundwater shall take at least 1 sample at every POE to the distribution system representative of each well after treatment. A typical NCWS does not have treatment and therefore a source water sample analysis is obtained at the raw water sample tap which is a sample tap closest to the well.

A specific sample siting plan is established during the survey and documented in the sanitary survey report and in the database.

Monitoring

Initial monitoring for new NCWS or new wells at existing facilities is required before approval. A NCWS may collect one sample every 3 years based upon at least one sample without detects or with any detects below the MCL and low vulnerability as determined by a sanitary survey. After 3 rounds of 1 sample per 3 years (9 years total) a reduction to 1 sample every 9 years can be made in accordance with R 325.10710(5) if metals are below the MCL in all samples.

MR Violation

If a MR violation occurs, the monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is reestablished. The LHD is to issue a MR violation. An example MR violation letter is in **Appendix F07**.

6.13.1 Inorganic MCL Response

The MCL for each specific metal is found below in Table 6-4 or may be found in the SDWA in Rule 604c.

Where the results of sampling for metals indicate a concentration that is more than the MCL, the department shall require the NCWS to collect 1 confirmation sample as soon as possible after the initial sample was taken, but not more than 2 weeks later, at the same sampling point as the original sample. If the average of two samples exceeds the specific MCL, contact your EGLE NCWS program staff member for consultation. For supplies monitoring more than once per year, compliance with the MCL for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by a running annual average at each sampling point.

Supplies monitoring annually or less frequently whose sample result exceeds the MCL for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium shall begin quarterly sampling. Compliance with the MCL shall be based on the running annual average.

Table 6-4 MCL's for Inorganic Chemicals

Contaminant	CAS #	MCL in mg/L
Antimony	7440-36-0	0.006
Arsenic	7440-38-2	0.010
Barium	7440-39-3	2
Beryllium	7440-41-7	0.004
Cadmium	7440-43-9	0.005
Chromium	7440-47-3	0.1
Cyanide (as free cyanide)	57-12-5	0.2
Mercury	7439-97-6	0.002
Nickel	7440-02-0	No MCL
Nitrate (as Nitrogen)	14797-55-8	10
Nitrite (as Nitrogen)	14797-65-0	1
Total Nitrate and Nitrite (as Nitrogen)	-	10
Selenium	7782-49-2	0.05
Thallium	7440-28-0	0.002

6.14 VOC Monitoring

Volatile organic compounds (VOC) include petroleum-based products; naturally occurring chemicals; and industrial solvents and chemicals. VOC are characterized by having a high vapor pressure making them to easily evaporate at ambient temperature. They may be associated with leaking underground tanks, improper disposal practices, leachate from landfills and other activities. Ingestion of these chemicals at certain levels in drinking water may lead to anemia, liver, and spleen disorders, reproductive problems, and an increased risk of certain cancers. Their presence in drinking water may be linked to possible contamination by these sources and may indicate a poorly constructed or damaged well, a vulnerable aquifer, a contaminated site, or a combination of any of these. The US EPA has established Maximum Contaminant Levels (MCLs) for some of these chemicals and others are required to be tested for, but no MCL has been established.

EGLE does not require transient NCWS to sample for VOCs. The LHD has discretion to require VOC sampling if there is a potential VOC threat located nearby.

VOC detects may occur after new plastic well installation or by storing chemicals in the same vicinity as the sample location. Follow up sampling may need to be collected to confirm the detection. EGLE Policy ODWMA-399-015 Response Procedures for Volatile and Synthetic Organic Chemical Contamination (**Appendix F82**) should be consulted.

Sampling Sites

Suppliers of groundwater shall take at least 1 sample at every POE to the distribution system representative of each well after treatment. A typical NCWS does not have treatment and therefore a source water sample analysis is obtained at the raw water sample tap.

A specific sample siting plan is established during the survey and documented in the sanitary survey report and in the database.

Monitoring

Sample results for new NCWS or new wells at existing facilities are required before approval. NCWS with initial results at or above half of the MCL listed in Table 6-5, shall continue to monitor quarterly until a permanent remedy is obtained, or it is determined the contaminant concentrations are consistently and reliably below a level considered an increased risk to public health.

A NCWS may be waived to one sample every 6 years based on at least one sample with no detects and low vulnerability as determined by a sanitary survey and source water assessment. Review [section 6.17](#) regarding waivers.

A NCWS may continue 1 sample every 6 years, only after evaluation and documentation of a waiver renewal.

MR Violation

If a MR violation occurs, a monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is reestablished. The LHD is to issue a MR violation. An example MR violation letter is **Appendix F07**.

Lab Comments on Results

If a laboratory reports results with a comment on the form, the LHD must review and determine if the sample can be used for compliance determination.

A laboratory comment may indicate the sample did not meet pH requirements. pH adjustment (acid preservation) is required at the time of collection for VOC analysis. The LHD should review the sample results history to determine if the supply has a history of no detections. A review of Environmental Mapper will show if there is contamination in the area. If both reviews indicate no concerns, the LHD may accept the sample for compliance.

VOC samples need to be at or below a specific temperature when received at the lab. Samples that do not meet the temperature requirement CANNOT be accepted for compliance purposes. Samples received within 24 hours after collection will be accepted if they are packed in ice. Samples not on ice will not be accepted for compliance. If you see a comment on your sample result indicating temperature requirements were not met, a new sample should be collected as soon as possible to avoid a monitoring violation.

6.14.1 VOC MCL Response

Where the results of sampling for VOCs indicate a concentration that is more than the MCL, the department shall require the NCWS to collect one confirmation sample as soon as possible after the initial sample was taken, but not more than 2 weeks later, at the same sampling point as the original sample.

For supplies monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. Supplies monitoring annually or less frequently whose sample result exceeds the MCL shall begin quarterly sampling. Compliance with the MCL shall be based on the running annual average. Contact your EGLE NCWS program staff member for consultation when an VOC MCL violation occurs.

If VOCs are detected and confirmed, the NCWS must sample quarterly for all VOCs and Ethylene Dibromide and Di bromochloropropane. (See Table 6-6, Additional VOCs).

Table 6-5 Required VOC Analytes

Contaminant	CAS #	MCL in mg/L	Text Code
1,1-dichloroethylene	75-35-4	0.007	CXVO
1,1,1-trichloroethane	71-55-6	0.20	CXVO
1,1,2-trichloroethane	79-00-5	0.005	CXVO
1,2-dichlorobenzene (o-dichlorobenzene)	95-50-1	0.6	CXVO
1,2-dichloroethane	107-06-2	0.005	CXVO
1,2-dichloropropane	78-87-5	0.005	CXVO
1,2,4-trichlorobenzene	120-82-1	0.07	CXVO
1,4-dichlorobenzene (para-dichlorobenzene)	106-46-7	0.075	CXVO
Benzene	71-43-2	0.005	CXVO
Carbon tetrachloride	56-23-5	0.005	CXVO
Chlorobenzene	108-90-7	0.1	CXVO
cis-1,2-dichloroethylene	156-59-2	0.07	CXVO
Dichloromethane (methylene chloride)	75-09-2	0.005	CXVO
Ethylbenzene	100-41-4	0.7	CXVO
Styrene	100-42-5	0.1	CXVO

Contaminant	CAS #	MCL in mg/L	Text Code
Tetrachloroethylene	127-18-4	0.005	CXVO
Toluene	108-88-3	1	CXVO
trans-1, 2-dichloroethylene	156-60-5	0.1	CXVO
Trichloroethylene	79-01-6	0.005	CXVO
Total Xylenes	1330-20-7	10	CXVO
Vinyl chloride	75-01-4	0.002	CXVO

Table 6-6 Additional VOC's

Contaminant	CAS #	MCL in mg/L	Test Code
Di bromochloropropane (DBCP)	96-12-8	0.0005	CXEV
Ethylene dibromide (EDB)	106-93-4	0.0005	CXEV

6.15 SOC Monitoring

Synthetic organic chemicals are commonly found in pesticides and other industrial and commercial chemical discharges, such as emissions from incinerators. It reaches groundwater through runoff and leachate from industrial and agricultural activities, as well as from landfills. Many of these chemicals may cause health effects such as liver and kidney problems, central nervous system and reproductive difficulties and may even increase the risk of certain kinds of cancers. Their presence in drinking water may indicate a damaged or poorly constructed well, an aquifer under the influence of surface water, a contaminated site, or a combination of any of these. The US EPA has established Maximum Contaminant Levels (MCL) for these chemicals in public water supplies.

EGLE does not require transient NCWS to sample for SOC's. The LHD has discretion to require SOC sampling if there is a potential threat located nearby.

Sampling Sites

Suppliers of groundwater shall take at least one sample at every POE to the distribution system representative of each well after treatment. A typical NCWS does not have treatment and therefore a source water sample analysis is obtained at the raw water sample tap. A specific sample siting plan is established during the survey and documented in the sanitary survey report and the database.

Monitoring

Initial monitoring for new NCWS or new wells at existing facilities is required before approval. A NCWS may be waived to one sample every 6 years based on at least one sample with no detects and low vulnerability as determined by a sanitary survey.

A NCWS may continue 1 sample every 6 years, only after evaluation and documentation of a waiver renewal.

Table 6-7 Required SOC Analytes

Required chemicals	CAS #	MCL in mg/L	Test Code
2,4,5-TP (silvex)	93-72-1	0.05	CXHB
2,4-D	94-75-7	0.07	CXHB
Dinoseb	88-85-7	0.007	CXHB
Pentachlorophenol	87-86-5	0.001	CXHB
Picloram	1918-02-1	0.5	CXHB
Aldicarb	116-06-3	0.003	CXLP
Aldicarb sulfoxide	1646-87-3	0.004	CXLP
Aldicarb sulfone	1646-88-4	0.002	CXLP
Carbofuran	1563-66-2	0.04	CXLP

Required chemicals	CAS #	MCL in mg/L	Test Code
Oxamyl	23135-22-0	0.2	CXLP
Alachlor	15972-60-8	0.002	CXPT
Atrazine	1912-24-9	0.003	CXPT
Chlordane, technical	12789-03-6	0.002	CXPT
Endrin	72-20-8	0.002	CXPT
Heptachlor	76-44-8	0.0004	CXPT
Heptachlor Epoxide	1024-57-3	0.0002	CXPT
Hexachlorobenzene	118-74-1	0.001	CXPT
Hexachlorocyclopentadiene	77-47-4	0.05	CXPT
Lindane (Gamma-BHC)	58-89-9	0.002	CXPT
Methoxychlor	72-43-5	0.04	CXPT
PCB (Aroclor 1016)	12674-11-2	Combined 0.0005	CXPT
PCB (Aroclor 1221)	11104-28-2		CXPT
PCB (Aroclor 1232)	11141-16-5		CXPT
PCB (Aroclor 1242)	53469-21-9		CXPT
PCB (Aroclor 1248)	12672-29-6		CXPT
PCB (Aroclor 1254)	11097-69-1		CXPT
PCB (Aroclor 1260)	11096-82-5		CXPT
PCB (aroclor)	1336-36-3	.0005	CXPT
Simazine	122-34-9	0.004	CXPT
Toxaphene	8001-35-2	0.003	CXPT

Increased Monitoring Requirements

If at any time a MR or MCL violation occurs a monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is re-established.

6.15.1 SOC MCL Response

Where the results of sampling for SOC indicate a concentration that is more than the MCL, the department shall require the NCWS to collect 1 additional sample as soon as possible after the initial sample was taken, but not more than 2 weeks later, at the same sampling point as the original and have it analyzed for the contaminant that was above the MCL. For supplies monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. Supplies monitoring annually or less frequently whose sample results exceed the regulatory detection level as defined in R 325.10605 shall begin quarterly sampling. Contact your EGLE NCWS program staff member for consultation when a SOC MCL violation occurs.

MR Violation

If a MR violation occurs, a monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is reestablished. The LHD is to issue a MR violation. An example MR violation letter is in **Appendix F07**.

6.16 Per- and Polyfluoroalkyl Substances (PFAS)

Michigan has established MCLs for PFAS in nontransient noncommunity water supplies effective August 3, 2020 (see Table 6-8). The rules do not require transient NCWS to sample for PFAS. The LHD has discretion to require PFAS sampling if there is a potential source of contamination located nearby.

Sampling Sites

Suppliers of groundwater shall take at least one sample at every POE to the distribution system representative of each well after treatment.

A specific sample siting plan is established during the survey and documented in the sanitary survey report and the database.

Monitoring

Initial monitoring for new NTNCWS or new wells at existing facilities is required before approval.

A new nontransient shall collect a routine sample within the first full quarter following the initiation of operations. If initial and first-quarter results are non-detect, the frequency may be set to annual.

If a contaminant in Table 6-8 is detected above the reporting limit in any sample, then the water system must monitor quarterly at each sampling point which had a detection. **Appendix F42** can be used as a template letter to send to the water system. The LHD may decrease the quarterly monitoring requirement if it has determined that the supply is reliably and consistently below the MCL. A groundwater supplier shall take not fewer than 2 consecutive quarterly samples and a surface water supplier shall take not fewer than 4 consecutive quarterly samples before this determination. After the LHD determines that the supply is reliably and consistently below the MCL, the department may allow the supply to monitor annually. **Appendix F43** is an example letter to reduce the PFAS monitoring requirement.

Table 6-8 Required PFAS Analytes

Required chemicals	CAS #	MCL	Test Code
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	370 ppt (ng/l)	CPFAS
Perfluorobutanesulfonic acid (PFBS)	375-73-5	420 ppt (ng/l)	CPFAS
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	51 ppt (ng/l)	CPFAS
Perfluorohexanoic acid (PFHxA)	307-24-4	400,000 ppt (ng/l)	CPFAS
Perfluorononanoic acid (PFNA)	375-95-1	6 ppt (ng/l)	CPFAS
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	16 ppt (ng/l)	CPFAS
Perfluorooctanoic acid (PFOA)	335-67-1	8 ppt (ng/l)	CPFAS

Calculating the RAA to Determine Compliance MCL Violation

The RAA is rounded to the nearest regulatory decimal place to determine compliance. (See the example under Arsenic on page 6-17.) To determine the RAA, add together the last 4 quarterly compliance samples and divide by 4. If more than one sample is collected in a quarter, the samples for the quarter are averaged to obtain one result for the quarter and that result is averaged with the remaining quarters. When the 5th sample is collected in the first quarter of the next year, that result is averaged with the previous 3 quarters and the result from the 1st quarter for the previous year is dropped from the calculation and so on. If the department requires a confirmation sample under R 325.10717d(12), then the average of the initial exceedance and the confirmation sample must be the result for the first quarter.

6.16.1 PFAS MCL Response

A quarterly sample above a PFAS MCL does not necessarily mean the NCWS is out of compliance. For supplies monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. Supplies monitoring annually whose sample result exceeds an MCL in Table 6-8 shall begin quarterly sampling. Compliance with the MCL must be based on the running annual average. The MCL is not exceeded until the average of 4 quarters is greater than the value specified in Table 6-8. If the owner fails to collect a quarterly sample, the RAA is based on the last 4 quarters sampled. Do not use zero as a result for the missed sample.

If one sampling point is in violation of the MCL for any chemical listed in Table 6-8, then the water supply is in violation of the MCL for PFAS.

Public notice posting is required as soon as possible but not later than 30 days after an MCL violation occurred. Contact your EGLE NCWS program staff member for consultation when an MCL occurs.

NCWS that exceed the PFAS MCL shall take measures to reduce exposure for consumers of the drinking water. When an MCL violation has occurred, the NCWS should begin an investigation to find a permanent alternative source that meets the drinking water standard. Replacing the source is the correct public health action to solve the problem and thus is the first step to return to compliance.

If the calculated average exceeds the MCL, the following procedures must be taken:

1. Public Notification is required. See [Chapter 7](#) for details on Public Notification and **Appendix G09**. PN must be resent every quarter until the violation is resolved.
2. NCWS to seek an alternate source meeting the SDWA standards. Consult with EGLE representatives for more information.
3. Interim precautionary measures for providing access to an alternate source (inclusive of bottled water) are to be made available.
4. The LHD is to issue a MCL violation letter (**Appendix F44**). PFAS MCL is calculated as a “running annual average”.

Treatment

A permit is required prior to construction or alteration of a NCWS, including the installation of treatment to meet drinking water standards. See [Chapter 11](#) for details on application and requirements for treatment conducted at NCWS.

6.17 Phase II/V Waivers

NTNCWS are required to sample for various IOC, VOC, and SOC (does not include PFAS) parameters. Federal regulations require full scale monitoring for all NTNCWS but allow states to issue monitoring waivers based on an assessment of the NTNCWS vulnerability to contaminants. The department may grant a limited scans waiver unless there is compelling evidence that no waiver should be authorized. With a limited waiver, the number of contaminants required to be analyzed is reduced. The issuance of waivers is determined based on sampling history, water system construction, geologic conditions, and the potential presence of the contaminants in the area.

NTNCWS without waivers must sample more frequently and analyze for additional contaminants beyond what is required in the limited category.

Limited Waiver

Sampling for fewer contaminants, and/or less often, is allowed by Michigan’s limited waiver. If the initial results are non-detect (or as otherwise noted for metals) for the reduced scan, the initial consecutive quarterly samples can be waived to one sample every 6 years or 9 years depending on the contaminant.

The Monitoring Waiver form (**Appendix F55**) must be completed and kept in the file. The waiver is only in effect for 6 years. For a system to remain on reduced monitoring, the waiver must be reissued every 6 years if results indicate a reduction is allowed.

6.18 Lead and Copper Monitoring

Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, water and formerly as a gasoline additive. The health effects of lead depend on the total exposure to lead sources over time and an individual’s health status. In children, elevated blood lead levels can result in behavior and learning problems, lower IQ, hyperactivity, slowed growth, hearing problems and anemia. According to the Mayo Clinic, symptoms in adults may include high blood pressure, abdominal pain, constipation, muscle, and joint pains, declines in mental functioning, numbness or tingling of the extremities, headache, memory loss, mood disorders, fertility issue, and miscarriage or premature birth in pregnant women.

The EPA set an action level of 15 parts per billion (ppb) for PWS. There currently isn’t a health-based value or standard for lead in drinking water. (This action level will be lowered to 12 ppb, effective 2025.)

The definition of “lead free” was updated and went into effect January 4, 2014. It was changed from not more than 8% lead content to “not more than a weighted average of 0.25% lead when used with respect to the wetted

surfaces of pipes, pipe fittings, plumbing fittings, and fixtures. The USEPA has issued a [document to identify lead-free markings](#) on water fixtures.

Lead enters drinking water primarily because of corrosion or wearing away of materials containing lead in the water distribution system. These materials include lead-based solder used to join copper pipes, brass, and lead piping. The presence of copper in drinking water is also primarily a result of corrosion.

Lead and copper for corrosion control sample collection shall be first-draw samples. These are to be collected after a minimum 6 hour stagnation period. Labs should be using white, large mouth, one liter bottle (Unit # 36CC using State lab test code CCUB). The sample location should have been used the day prior to sampling to obtain water representative of normal water consumption.

Schools should be advised to conduct sampling during the school year. Those on reduced annual or triannual monitoring need to sample in the months June through September. Sampling from a relatively inactive system during summer break could return results that are not representative of the NCWS operational water quality.

Since corrosion control sampling requires first-draw samples after a minimum 6-hour stagnation time, NCWS that operate 24 hours per day need to find a way to ensure a 6-hour stagnation period. The operator could tag (bag) the sample location for 6 hours prior to the sampling event. If this is not practical, a NCWS may apply, in writing, to the department for prior approval to substitute non first draw samples. See Rule 710a(2)(b).

A reminder letter (**Appendix F75**) should be sent for NCWS on reduced monitoring which includes the lead/copper sample report form (**Appendix F70**).

Compliance Period

A NCWS sampling annually or less frequently shall collect lead/copper sampling during the months of June, July, August, or September.

USEPA has placed an emphasis on adherence to this rule.

NTNCWS on reduced monitoring and not open during June through September, may monitor during an alternate four-month period if approved by the LHD. The alternate period should be when consumers are exposed to the highest lead levels in the drinking water and should be consistent from year-to-year. The department's decision to allow an alternate four-month period must be documented, prior to sampling, using **Appendix F75.2**. Temporary assignment of an alternate four-month period could be appropriate in rare instances.

Initial (Standard) Monitoring

New NTNCWS (or new wells for existing NTNCWS) are required to collect the "standard" number of water samples per Table 6-9 for two consecutive six-month monitoring periods the first year.

Reduced Monitoring Provisions

If results of two consecutive 6-month monitoring periods reveal no concerns about lead or copper, the sampling frequency may be reduced to once each year for three consecutive years and the number of samples reduced per the right-hand column on Table 6-9.

For buildings constructed after 1988, if the two consecutive 6-month samples are less than or equal to 0.005 mg/L lead and 0.65 mg/L copper, the number of samples may be reduced, and the sampling frequency may be reduced to once every 3 calendar years.

If the three consecutive annual sets of samples (after the two consecutive six-month) are below the AL, the sampling frequency may be reduced to once every 3 years. A supply should not exceed three years between sampling events.

Increased Monitoring Requirements for AL Exceedance

If at any time an AL exceedance occurs, the number of samples required, and the monitoring frequency revert to the baseline until the problem has been corrected. This means that the NTNCWS will be required to sample per the "standard", middle column of Table 6-9.

If the AL is exceeded, the NCWS will be required to follow additional procedures as outlined below in the AL Exceedance [section 6.18.4](#).

6.18.1 Lead and Copper Sample Locations

Changes to the definition of lead free went into effect January 4, 2014. The SDWA reduced the amount of lead content allowed to be not more than 0.25% by weight. There currently is not a universally used lead free logo or seal. Eight ANSI accredited third-party certification bodies provide product certification to the SDWA lead free requirement.

Lead free standards are:

- NSF/ANSI 372: Indicates certification to lead free requirement.
- NSF/ANSI 61 Establishing leach test performance requirements for inline and endpoint devices.
- NSF/ANSI 61-Annex G: Retired from NSF/ANSI 61 in late 2013. Although retired, products may still be available that bear the certification marks., which indicate compliance with both NSF/ANSI 61 and the lead free requirement.
- AB1953 (2006), AB1953-2006 OR AB1963: California markings that indicate certification to the lead free requirement.

EPA has developed a document entitled [How to Identify Lead Free Certification Marks for Drinking Water System & Plumbing Products](#) to help identify lead free fixtures. It can be downloaded on to a smart phone or printed for reference.

Distribution System Materials Inventory (DSMI)

The purpose of completing a DSMI is to summarize what is currently known about the materials within the water system and identify records of support. The DSMI will help identify areas within the water system that may contain lead and contribute to lead exposure.

The Preliminary DSMI focused on identifying and inventorying water service line materials, specifically, those that are made of or contain lead. The Final DSMI is required by 2025. For most noncommunity water systems, the service line is the connection between the water well and storage tank. The service line allows for the transfer of water from your well to the storage tank and into the distribution (plumbing) system. A few noncommunity water systems may be configured where there is a service line leading to a living unit from a water main served by the water well (e.g., a seasonal manufactured housing community). The connection between the water main and the living unit is considered as one service line.

In 2019 NTNCWS systems were required to submit a certification of their SSP and DSMI. A preliminary DSMI and SSP is required for new NTNCWS that are being permitted or reclassified before 2025. The certification form can be found in **Appendix F70.1**.

LCR Sample Siting Plan

The SDWA identifies two tiers for lead and copper monitoring for NTNCWS.

Tier 1 sampling pool consists of sample sites that:

- Contain lead pipes; and/or,
- Are served by a lead service line.

Tier 2 sampling pool consists of sample sites that:

- Contain copper pipes with lead solder installed before July 1988.

Table 6-9 is an abridged version of the required number of samples table from the SDWA. If a NCWS has a population greater than 3,300 refer to the SDWA for the number of samples.

Table 6-9 Lead/Copper Sampling According to Population Served

Population Served	Number of Samples Standard, every 6 months	Number of Samples Reduced, every 12 months
501 to 3,300	20	10
101 to 500	10	5
Fewer than 101	5	5

If a NCWS has more than the required number of drinking water fixtures, select ones using the criteria above. If a NCWS has less than the chart number of drinking water fixtures, they need to sample the drinking water locations they have and document that all the drinking water taps were sampled. This should be documented as

the sample siting plan for lead and copper. **Appendix F70** should be used by the operator to identify the sample locations.

Experience has shown that fixtures installed before 1983 have been causes for ALEs. LHD shall develop the sample siting plan by looking at the entire NCWS and choose those samples sites that have higher public health risk (e.g., sink in a nursery), have copper pipes with lead solder, have brass components and sites frequently used for consumption. Do not remove sites that have been previously sampled if there has been elevated or exceeding levels of lead or copper. If sample sites are modified, document it thoroughly in the file.

Sample only interior fixtures where cold water is typically drawn for consumption such as drinking fountains, and kitchen or break room faucets. Do not sample at janitor sinks, hose bibs, or any other faucet not typically used for drinking. Those samples sites that would be considered higher risk, such as a nursery sink, should have higher priority over other sample site locations.

A specific sampling site plan is established during the survey and documented in the sanitary survey report. Samples for subsequent rounds of monitoring must be collected from the same sites used in initial round of monitoring unless reason for change is documented in the file. LHDs should consider adopting a method for unique sample site identification that includes the type of fixture. For example, the following abbreviations might be used:

B = Bubbler (both in classrooms and as part of a drinking fountain)
WC = water cooler (plug-in chiller unit)
CF = classroom faucet
KS = kitchen sink
BF = bathroom faucet
NS = nurse's sink

It is critical that the water supply collects the samples at the designated locations in the sample siting plan. It is also just as important that the sample locations on the water sample result match the sample location names on the sample siting plan. The operator and the LHD must agree about the names of the taps.

If a sample location previously sampled is removed from the distribution system, the LHD must determine if the site has been permanently removed or replaced with new plumbing. The water system must document to the LHD what specific actions were taken.

1. Removed from distribution: LHD shall determine a replacement site based on risk of lead or copper exposure.
2. Replaced with new plumbing: LHD shall determine a replacement site based on risk of lead or copper exposure. If there are no additional sites, the site may be used with a new identifier. If the replacement was in response to an elevated lead or copper result, an investigative sample for lead and copper should be collected.

Sample sites that show an elevated level of lead or copper should not be removed from the sample siting plan.

Facilities that use POU treatment to meet a drinking water standard are required to post "Water Not for Drinking" at all other available outlets. For lead/copper sampling Rule 325.10710a(1)(a) of the Safe Drinking Water Act specifies, "*Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.*" This rule is intended for CWS and is not practical for NCWS with POU/POE treatment installed. Rule R 325.10710a (1) (g) allows sampling from treatment systems. The treated taps should be designated in the sample siting plan as the only valid locations for routine LCR monitoring.

6.18.2 Lead/Copper Monitoring Violation

The LHD is to issue a MR violation for the missed samples. An example MR violation letter is in **Appendix F07**.

If a MR violation for lead/copper occurs at a system on annual or 3-year, the system shall be directed to sample the following summer (June-September).

Sampling Protocol

- ✓ Do not clean or remove the aerator prior to sampling. Do not perform a pre-stagnation flush of the NCWS.

- ✓ Samples collected must be first draw samples. Water must sit idle in the pipes for an extended length of time before sampling. Do not use any water for at least 6 hours before sampling. The best time to sample is early morning.
- ✓ Collect the sample from sites on the sample plan. Record location, time and PWSID on the Lead / Copper Report Form (**Appendix F70**).

Lead Consumer Notification

All NTNCWS are required to provide all lead and copper testing results for drinking water to consumers, pursuant to Rule 410(5) of the SDWA. The consumer notice shall be issued within 30 days of the owner/operator learning the results, even if no lead or copper is detected. NCWS with an ALE are required to provide lead Public Education in addition to consumer notification.

Using WT data, EGLE is providing the lead and copper consumer notice forms to NCWS. When the transition to SDWIS is complete, the LHD will perform the tracking and reporting of violations. Due to the timelines associated with Consumer Notification, it is critical that LHDs enter private lab data into the database promptly. An example of the lead consumer notification can be found in **Appendix G11.1**. The department may need to issue reporting violations in cases where consumer notification is not certified by the NCWS.

“Improper Sample” or “Invalid Sample”

All 1-liter first draw lead and copper samples tested in the monitoring period must be used in calculating the AL. A sample cannot be invalidated even though it may exceed the 6 hour stagnation period. See ODWMA-399-027 Lead and Copper Rule Implementation Policy and Procedure (**Appendix F73**) for information on an “Improper Sample” or “Invalid Sample”.

6.18.3 Lead or Copper Action Level

Often, elevated results are only found at a few of the sample locations within their sampling pool. This may be caused by several different factors as further explained below.

Lead in water can be in two forms - dissolved lead and particulate lead. Lead will dissolve into the water to varying degrees from plumbing components that contain lead (lead pipes, leaded brass, and leaded solder). Particles of lead can also be released from all these sources. The particulate lead is essentially 'lead rust' and since all metal plumbing components (e.g., iron, copper, lead) corrode, if the material is present, iron, copper and lead particles can be released sporadically from the different plumbing components throughout the plumbing network. In addition, galvanic corrosion can also result in the release lead into the water when dissimilar metals are connected (e.g., lead pipe connected to copper pipe).

Elevated results can be caused by the presence of numerous tin/lead soldered pipe joints located near the fixture being used as the sampling point. Replacement of the connecting piping between the fixture and the main water line with copper pipe with lead-free soldered joints or with nonmetallic materials may be an option to correct the problem.

Chrome plated brass fixtures, brass valves, and copper or lead piping may be imparting excessive lead or copper to the drinking water on first draw samples. Replacing (or eliminating) the fixture or piping that gives elevated lead or copper results, may also be an option.

Old water coolers with a lead-lined tank were identified by the Lead Contamination Control Act (LCCA), which was signed into law on October 31, 1988. The LCCA mandated the repair, replacement or recall and refund of drinking water coolers with lead-lined water tanks. This list is available online on the [EPA Fact Sheet: Lead in Drinking Water Coolers](#). If a water cooler is identified as being on this list, it must be removed from service.

An action level exceedance (ALE) is when the 90th percentiles of all the lead or copper analyses within a specified monitoring period have *exceeded* 0.015 mg/L for lead (15 ppb) or 1.3 mg/L for copper (1,300 ppb). The 90th percentile value is rounded to the nearest regulatory decimal place to determine compliance. For example, a 90th percentile calculation of 0.0154 mg/L for lead or 1.34 mg/L for copper is rounded down to 0.015 mg/L and 1.3 mg/L respectively and is not an exceedance. A 90th percentile calculation of 0.0155 mg/L for lead or 1.35 mg/L for copper is rounded up to 0.016 mg/L and 1.4 mg/L respectively and is an exceedance. The values for individual samples should be entered into the 90th percentile calculation as they are reported on the sample results, using all significant figures are described in [Section 6.3](#).

Typically, ALs are determined at the end of the compliance monitoring period. For NCWS on annual or once every 3 years, the monitoring period ends September 30. If a NCWS obtains high lead or copper samples, it is not appropriate to wait until the end of the monitoring period to calculate the AL and start public education and corrective action. In such cases, the AL should be determined when the NCWS has collected all the routine samples required for the monitoring period. If the 90th percentile results in an ALE, start the clock for the 60 days to do public education, determine water quality parameters, etc. However, ALEs should get quick attention by both the water supply and the LHD/EGLE. Contact your EGLE NCWS program staff if you determine a NCWS has an ALE.

Calculating the 90th Percentile

All 1-liter lead and copper first draw samples collected within the monitoring period must be reported and used in the AL calculation. If a sampling site is sampled multiple times during a monitoring period, only the highest lead and the highest copper result from that site may be used in the calculation.

SDWIS will automatically calculate the 90th percentile value for each distribution system. However, if a water supply has multiple distribution systems that serve the same population, the 90th percentile value may have to be calculated manually and entered into SDWIS. To calculate the 90th percentile by hand, transfer the lab results to the AL Determination Worksheet (**Appendix F71**) from lowest result to the highest. EGLE has developed an Excel workbook (**Appendix F71.1**) that can be used to calculate the 90th percentile electronically.

Calculating the 90TH Percentile

If less than 5 samples are taken and ANY are greater than 0.015 mg/L for lead or 1.3 mg/L for copper, the AL *is exceeded*.

For 10 samples, the 90th percentile can be obtained by multiplying the number of samples by 0.9, i.e., 10 samples x 0.9 = 9, and then the result for the 9th sample is the 90th percentile.

Individual fixtures with elevated lead or copper

Supplies may have one or more fixtures that exceed the AL, but do not trigger an ALE. LHDs are advised to inform NCWS to post each fixture with a result above 15 ppb with “do not drink” sign temporarily and follow up with a plumbing assessment for permanent solutions. **Appendix F76** is an example letter which can be sent to NCWS that have one or more taps with elevated lead result(s). **Appendix F77** can be used for copper.

LHDs may want to recommend that NCWS post or replace taps that show any appreciable amount of lead, even though they tested below 15 ppb. EGLE recommends remediation and posting with “do not drink” signs for taps that test over 5 ppb at schools and daycares.

6.18.4 Lead or Copper AL Exceedance

When a NTNCWS has an ALE for either lead or copper, the NCWS is required complete several steps. To complete all of the required documentation in this process, EGLE created a tracking form for the LHD and NTNCWS to use as **Appendix 72.4**. A summary of requirements with rule citations and deadlines can be found in **Appendix 72.3**.

- ✓ Provide public advisory (PA) of lead exceedance within 3 business days of learning of the exceedance. (PA is not required for copper ALE.) It is strongly encouraged that lead PE be distributed as the public advisory. If you are not able to complete the PE in 24 hours, a public advisory template may be found in **Appendix G11.2**.
- ✓ Distribute lead PE within 60 days of the end of the monitoring period. (PE is not required for copper ALE.) EGLE suggests PE be completed with advisory. A PE template is **Appendix G11**.
- ✓ Collect water quality parameter samples within 6 months of the start of the monitoring period in which they exceeded.
- ✓ Collect a source water sample for lead and copper within 6 months of the end of the monitoring period in which they exceeded. This is not a first draw sample.
- ✓ Either propose a corrosion control study or treatment plan within 6 months of the end of the monitoring period.

Water quality parameter (WQP) sampling is required during each monitoring period the AL is exceeded (pre- and post-treatment samples are required). WQP shall be collected at the raw water tap and in distribution. Use

Table 6-10 to determine the number of distribution sites required. WQP sampling requires two sample sets at least 24 hours apart from each location.

Failure to collect WQP samples in the specified period warrants a MR violation and Tier 3 Public Notice.

The sampling parameters are listed below.

- pH (field measurement)
- Alkalinity
- Calcium
- Chloride
- Sulfate
- Conductivity
- Water Temperature (field measurement)
- Orthophosphate (if used in existing treatment applications)
- Silica (if used in existing treatment applications)

The pH and temperature readings must be field measurements, done at the sample site with a properly calibrated instrument. Conductivity can be done at the sample site with a properly calibrated instrument. All other parameters must be tested by personnel acceptable to the department (Rule 601a(2), (a competent lab using proper methods and techniques).

Table 6-10 Number of WQP Sampling Sites

Persons Served	Number of Sites for WQP
3,301 – 10,000	3
501 – 3,300	2
101 – 500	1
<100	1

WQP sample results should be entered into the database. Lead and copper raw water samples should be entered for each source well.

Supplies that have an ALE must submit a treatment option proposal within 6 months of the end of the monitoring period in which the AL was exceeded.

- a. Conduct a treatment study OR
- b. Install corrosion control treatment

The LHD should consult with the NCWS to determine whether the NCWS should provide bottled water or if certain fixtures can be identified as available for consumption.

A letter notifying the owner/operator of an AL exceedance is to be kept in the file. Contact EGLE for consultation. An example letter and timeline may be found in **Appendix F72.1** and **Appendix 72.2**. The NCWS must be placed back to their standard monitoring schedule.

If there is time remaining in the monitoring period, the NCWS may be able to take corrective actions within the monitoring period. Corrective action within the monitoring period may include plumbing material replacement and further investigative sampling.

All lead and copper first draw 1 liter sample results from the monitoring period must be reported and used in the AL calculation. Lead and copper 90th percentiles are calculated using the highest lead and copper results from each tap. A replaced fixture should be identified as a different tap.

6.18.5 Lead and Copper ALE Response Options

The NCWS must propose a corrosion control treatment plan OR propose to perform a corrosion control study no later than six months after the end of the monitoring period.

Corrosion Control Study (The Study)

A study to evaluate the effectiveness of different treatment options such as pH, alkalinity, or hardness adjustment; or injection of a corrosion control chemical such as phosphate or silicate in preventing the leaching of plumbing materials into the water. The NCWS evaluates these corrosion control treatment processes using information such as water chemistry, physical tests such as pipe loop tests, or coupon

tests as described in Rule 604f(3) of the SDWA. A water quality consultant may be necessary. A Study allows NCWS sufficient time to select an appropriate treatment process to install.

An alternate option within The Study is to pursue investigative study and plumbing material replacement to reduce the amount of lead and possibly copper in the drinking water.

For this alternate option, the NCWS completes an investigative study by performing first-draw lead and copper sampling at every potential drinking water location to identify all taps that exceed the AL. Replacement of the exceeding fixture(s) and all connecting plumbing that can be accessed, with new, low-lead products. First draw confirmation sampling shall be completed on all replaced fixtures to demonstrate that water from these new taps is below the lead and copper AL.

If, after the investigative study and plumbing material replacement, all drinking water fixtures are below the lead and copper AL, the supply would be allowed to cease installing optimal corrosion control treatment in Rule 604f(2)(c).

Corrosion Control Treatment Plan (Treatment)

If a NCWS chooses to proceed directly to selecting a treatment process. The steps involved in selection, installation, operation, and monitoring of such a treatment system are complex. A qualified consultant is necessary. A proposal and permit application are required. The treatment technology selection must be based on data such as the WQP sample results whether lead, copper, or both are high and any existing treatment systems. After treatment is installed, the water supply must be operated by a D-5 level operator, submit monthly operation reports, perform ongoing WQP sampling in the treated water, and meet any other applicable requirements for the treatment option selected.

6.18.6 Corrosion Control Study

If selecting The Study option, the NCWS must meet the reporting time lines and technical requirements listed in this section. During the study period, it may be possible to identify and remove lead and/or copper sources, perform confirmation samples, and collect compliance samples.

The Study phase starts when a NCWS reports an intention to conduct a treatment study by notifying the LHD in writing within 6 months of the end of the monitoring period in which the AL was exceeded. Results from The Study are to be reported to the LHD every 6 months following the NCWS notice of intent to conduct a treatment study.

Alternate Option

If a NCWS plans fixture replacement, they shall sample all drinking water taps to determine the scope of the problem. The LHD should perform a joint technical site visit. The field visit should include a plumbing assessment of the entire water system.

- Collect first draw samples at all drinking water taps to identify all taps with elevated levels of lead or copper. Use 250 mL sample containers. Results will not be used for compliance calculations.
- Taps over the AL should be posted as unsafe for consumption.
- Taps over 5 ppb lead at schools and daycares should be posted as unsafe for consumption.
- Review results of first draw samples to identify the scope of the problem and evaluate the feasibility of fixture replacement or removal (if allowed by plumbing code). Replacement of identified fixtures and connecting plumbing, followed by confirmation sampling, is required to evaluate effectiveness of the study.
- All sample results shall be posted by the NCWS to meet Lead Consumer Notification requirements.

Any fixtures physically removed from service must be reported to the LHD.

The USEPA does not recognize flushing as a permanent alternative to the replacement of fixtures and/or plumbing or to the installation of corrosion control treatment. The LHD should encourage NCWS to identify and eliminate taps that exceed or are approaching the AL to eliminate sources of lead or copper in drinking water.

After all plumbing replacement and investigative sampling is completed, the water system shall begin semi-annual compliance monitoring.

6.18.7 Corrosion Control Treatment Plan

If fixture replacement is not practical or effective after an ALE, the NCWS must focus the study on selection and installation of the corrosion control treatment system.

The method shall be based on actual testing data from the system or on treatment system performance documented from other supplies with similar characteristics. EGLE may require the NCWS to conduct corrosion control studies.

The treatment proposal must be submitted within 6 months of the end of the monitoring period in which an AL was exceeded. One of the following optional corrosion control treatment methods (or combinations) may be selected:

1. Alkalinity and pH adjustment
2. Calcium hardness adjustment
3. Addition of a phosphate or silicate-based corrosion inhibitor, at a residual which is effective in reducing lead/copper levels

The LHD and EGLE shall review the corrosion control treatment method recommendation submitted and approve optimal treatment within 24 months of the end of the monitoring period the NCWS exceeded the AL.

The NCWS shall install corrosion control treatment within 24 months after optimal treatment is approved by the LHD or EGLE.

Following installation of the corrosion control treatment, the NCWS shall collect one WQP sample every 2 weeks at the POE to the system (at the raw water sampling tap, prior to treatment). In addition, one WQP sample shall be collected from a distribution system tap every 6 months.

After installing corrosion control treatment, the NCWS shall conduct lead and copper monitoring for at least two consecutive 6-month monitoring periods. One set of first draw tap samples must be collected during each monitoring period.

Based on results of WQP monitoring by the NCWS, the LHD and EGLE shall approve optimal water quality control parameters. The NCWS shall operate in compliance within the parameter range set by the LHD and EGLE. MORs are required to be submitted to the LHD during this period.

After meeting ALs for two consecutive monitoring periods with treatment, the NCWS may request a reduction in the frequency of lead and copper monitoring. Annual frequency may be approved.

6.18.8 Returning to Compliance after ALE

To return a water system to compliance after a lead/copper ALE, the water system must complete monitoring for at least 2 six month compliance periods after the violation occurred.

6.19 DBP Monitoring

Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBP). The department sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THM) and Haloacetic acids (HAA).

Total trihalomethanes (TTHM) means the sum of the concentration in milligrams per liter rounded to 2 significant figures of all of the following:

- The trihalomethane compounds
- Trichloromethane (chloroform)
- Dibromochloromethane
- Bromodichloromethane
- Tribromomethane (bromoform)

Haloacetic acids (five) (HAA5) mean the sum of the concentrations in milligrams per liter rounded to 2 significant figures after addition of all of the following:

- monochloroacetic acid
- dichloroacetic acid
- trichloroacetic acid
- monobromoacetic acid
- dibromoacetic acid

The MCL for TTHM is 0.080 mg/L and for HAA5 is 0.060 mg/L. NTNCWS that add chlorine to the drinking water must sample the treated water routinely. The number and location of samples is defined in Rule 719h. Reduction of DBP monitoring is allowed under Rule 719j.

Contact EGLE staff for further guidance if the NCWS serves more than 10,000 people or uses a subpart H source. DBP requirements do not apply to transient NCWS unless they use chlorine dioxide.

Sampling Sites

Samples must be collected at a location representing the maximum time water is in the distribution system. Typically, this would be an active tap farthest from the pressure tank.

A specific sample siting plan is established during the survey and documented in the sanitary survey report.

An example letter to the owner/operator for DBP sampling may be found in **Appendix F80**.

Monitoring

Initial monitoring is required for new NCWS or new wells at existing facilities before approval. Routine monitoring frequency and number of samples is based on population. Refer to Rule 719h table (2). The SDWA allows for a reduced monitoring of DBP based on concentration as defined in Rule 719j.

DBP samples need to be at or below a specific temperature when received at the lab. Samples that do not meet the temperature requirement cannot be accepted for compliance purposes. Samples received within 24 hours after collection will be accepted if they are packed in ice. Samples not on ice will not be accepted for compliance. If you see a comment on your sample result indicating temperature requirements were not met, a new sample should be collected as soon as possible to avoid a monitoring violation.

Ozone

NT injecting ozone must sample for bromate as a disinfection by product. This does not include water bottlers that use ozone in their bottling and packaging operations which are regulated under the FDA. Rule 719e (2)(c) of the SDWA states, "Suppliers using ozone shall monitor for bromate by taking 1 sample per month at the entrance to the distribution system for each treatment plant in the NCWS using ozone. Sampling frequency may be reduced to quarterly if the running annual average bromate concentration is less than or equal to 0.0025 mg/L for the most recent 4 quarters.

Chlorine Dioxide

T and NT injecting chlorine dioxide must sample for chlorite as a disinfection byproduct. Requirements for chlorite sampling when using chlorine dioxide can be found in Rule 719e (2)(b) of the SDWA.

MR Violation

If a MR violation occurs, a monitoring frequency reduction is not allowed until the problem has been corrected and appropriate water quality history is reestablished. The LHD is to issue a MR violation. An example MR violation letter is in **Appendix F07**.

6.19.1 DBP MCL Response

Sample results are expected to be below the MCL for DBPs since groundwater sources are low in total organic carbon and disinfection byproduct precursors.

Where the results of sampling for DBP indicate a concentration that is more than the MCL, the supply shall increase monitoring to dual sample sets once per quarter, taken every 90 days, at all locations. The supply is in violation when the locational RAA after four quarters is above the MCL. Contact your EGLE representative if any results exceed the MCLs.

Table 6-11 MCL for Disinfection By-Products

Contaminant / Residual	MCL or MRDL in mg/L	Test Code
Total Trihalomethanes (TTHM)	0.080	CXTM
Haloacetic Acids (five) (HAA5)	0.060	CXHA
Bromate	0.010	CDBP
Chlorite	1.0	CDBP
Chlorine	4.0 as chlorine	NA
Chloramines	4.0 as chlorine	NA
Chlorine Dioxide	0.8 as chlorine dioxide	NA

Chapter 7

Public Notice and Public Education

A NCWS that fails to meet or comply with requirements of the SDWA is required to notify the public in a prescribed format. The procedures for requiring a NCWS to enact a PN depends largely upon the type and concentration of the contaminant involved or the severity of the violation. Informed discretion on the part of the LHD will be required to determine the best course of action.

There are 10 required elements in a public notice. Notices must contain:

- A description of the violation that occurred, including the contaminant(s) of concern, and the contaminant level(s);
- When the violation or situation occurred;
- The potential health effects (including standard required language);
- The population at risk, including subpopulations vulnerable if exposed to the contaminant in their drinking water;
- Whether alternate water supplies need to be used;
- What the water system is doing to correct the problem;
- Actions consumers can take;
- When the system expects a resolution to the problem;
- How to contact the water system for more information; and
- Language encouraging broader distribution of the notice.

Along with the PN, the NCWS may need to provide an alternative source of drinking water until the problem has been corrected. A PN warns all potential users that the NCWS has been found to be in violation of the SDWA. Examples of PNs are provided in **Appendix G** and from [USEPA](#).

Failure of a NCWS to meet the PN requirement constitutes a violation of the SDWA. See [section 7.6](#) for instructions on how to issue a public notice violation.

7.0 PN Tiers

The USEPA has assigned each violation and situation requiring PN to one of three categories, or tiers, based on the risk of adverse health effects.

Tier 1

A PN is required for violations and situations that have significant potential to have serious adverse effects on human health because of short-term exposure.

- E. coli MCL violation
- Nitrate, nitrite, or total nitrate and nitrite MCL violation
- Failure to collect confirmation sample within 24 hours of learning of initial sample nitrate, nitrite, or nitrate and nitrite over the MCL
- Violation of the Maximum Residual Disinfectant Level (MRDL) for chlorine dioxide
- Treatment technique (TT) violation involving single exceedance of the maximum allowable turbidity limit
- Waterborne disease outbreak or another waterborne emergency
- Other violations or situations with significant potential to have serious adverse effects on human health because of short-term exposure

Tier 2

A PN is required for all other violations and situations that have potential to have serious adverse effects on human health.

- All MCL, MRDL, not included in tier 1
- TT violations resulting from failure to perform level 2 assessment or corrective actions following an E. coli MCL
- Where a tier 3 PN is insufficient, based on potential health impacts and persistence of a violation

- Violations of the conditions of a variance or exemption

Tier 3

A PN is required for all other violations and situations not included in tier 1 and tier 2.

- MR violations, except those in tier 1 or 2
- TT violations resulting from failure to perform level 1 assessments or corrective actions
- Failure to comply with testing procedures
- Operation during a variance or exemption
- Availability of unregulated contaminant monitoring results
- Fluoride level above 2 mg/L
- Seasonal supply failure to provide start up certification to the department

7.1 Issuing a PN

PNs should be issued as soon as practical but no later than listed in Table 7-1. PNs must be posted for as long as the violation or situation persists, but in no case for less than seven days even if you resolve the violation or situation before seven days.

Table 7-1 Requirements for Issuing a PN

PN Tier	Deadline for Initial PN	Repeated PNs	Delivery Methods	PN Signed and Returned to LHD
1	24 hours	As dictated by the Department	Posting, hand delivery, radio, and/or television.	10 days after the deadline
2	30 days	Every 3 months	Any other method calculated to reach others not reached by the first method.	(Reporting violation if the signed PN is not received on time)
3	1 year	Annually		

7.2 Tier 1: Acute Health Risk

The following procedures are to be used when unsatisfactory results from water sampling or other physical evidence illustrates that a public health threat has or may occur, involving the NCWS. The LHD has enforcement options for failure to post when a MCL violation has been obtained. The NCWS must maintain the PN until notified otherwise by the LHD.

7.2.1 E. coli Bacteria

Notify the NCWS of their requirement to institute PN. The PN must contain the 10 elements noted in Rule 405 and follow tier 1 PN requirements.

- ✓ Provide PN as soon as possible but not later than 24 hours after the NCWS learns of the violation.
- ✓ Include the mandatory health effects language for *E. coli* or use sample posting **Appendix G03**.
- ✓ The NCWS shall provide an alternate supply of water for drinking
- ✓ Verification of posting submitted back to the LHD (usually a signed PN copy). The LHD should date stamp the receipt of the PN. Enter the date of the PN verification receipt into the database using code SIF.

7.2.2 Nitrate/Nitrite

Notify the NCWS of their requirement to institute PN. The PN must contain the 10 elements noted in Rule 405 and follow tier 1 PN requirements.

- ✓ Provide PN as soon as possible but not later than 24 hours after the NCWS learns of the violation.
- ✓ The PN must clearly state that the standard for nitrate (10 mg/L) or nitrite (1 mg/L) has been exceeded.
- ✓ Include the mandatory health effects language for nitrate (Sample PN language in **Appendix G05 and Appendix G05.1**)
- ✓ The NCWS provide an alternate supply of water for drinking

- ✓ Verification of posting must be submitted back to the LHD (usually a signed PN copy). The LHD should date stamp the receipt of the PN. Enter the date of the PN verification receipt into the database using code SIF.
- ✓ If the NCWS is a childcare serving infants, the LHD should complete a visit to ensure the PN is posted, and bottled water is being used. The DHHS Licensing Agent should be copied on the violation notice.

7.2.3 Other Significant Public Health Threats

Violation of TT requirements, occurrences of waterborne disease outbreaks or other waterborne emergencies also warrant significant public health threats requiring that the supplier of the water executes the PN procedures.

A loss of system pressure may constitute a significant health threat and may need to be placed on “precautionary measures”.

7.3 Tier 2: Potential for Health Threat

These types of public notification are required for some MCLs, TT requirements, violations of monitoring and testing procedure requirements that are not significant health threats or where the department determines a potential health threat.

7.3.1 Arsenic

The PN or posting must contain the 10 elements noted in Rule 405 with the following specific to the chemical.

- ✓ Notify the NCWS of their requirement to institute PN
- ✓ Clearly state that the standard for arsenic of 10ppb or 0.010 mg/L as a running annual average
- ✓ Include the mandatory health effects language for arsenic as indicated in the SDWA
- ✓ Verification of posting must be submitted back to the LHD (usually a signed PN copy). The LHD should date stamp the receipt of the PN. Enter the date of the PN verification receipt as a violation follow up action using code SIF

7.3.2 Organic and Inorganic Chemical (including PFAS)

The PN or posting must contain the 10 elements noted in Rule 405 with the following specific to the chemical.

- ✓ Notify the NCWS of their requirement to institute PN
- ✓ Clearly state that the standard for the chemical or chemicals has been exceeded (Provide the standard and the levels obtained at the water system)
- ✓ Include the mandatory health effects language for each chemical as indicated in the SDWA
- ✓ Verification of posting must be submitted back to the LHD (usually a signed PN copy). The LHD should date stamp the receipt of the PN. Enter the date of the PN verification receipt as a violation follow up action using code SIF
- ✓ Repost every quarter until the violation is resolved

7.4 Tier 3: Other PN Reasons

Violations or situations that do not institute an immediate significant or potential health risk warrant a tier 3 PN which requires fewer elements than a tier 1 or tier 2.

Monitoring and Reporting Violations

A standard posting is found in **Appendix G10** which you can use for this purpose. The posting may be modified to suit your needs; however, ensure you include all the required language.

Rule 404(1) requires the posting to remain in place for the duration of the violation. This means posting must remain in place until the water system receives the results of the appropriate water sample(s) for the current monitoring period. If the violation notice was sent after samples were already collected and reported, the PN must remain up for a minimum of one week from the date of the violation notice.

The NCWS is advised a signed and dated copy of the PN is required to be submitted back to the LHD for verification the notice was issued. The LHD should date stamp the receipt of the PN. Enter the date of the PN verification receipt as a violation follow up action using code SIF.

7.5 Procedures for Lead Public Education

If a NT exceeds the lead AL, the NCWS shall provide public education materials to all users of the water system. Contact the NCWS once an AL exceedance is calculated or reported. Notify them of the requirement to deliver public education.

- ✓ Provide every employee or student with the mandatory public education information. Do not modify PE without consulting EGLE. The PE form found in **Appendix G11** may be copied or reprinted and used for this purpose. The health effects of lead can also be found in **Appendix G11.1**
- ✓ The NCWS shall return a signed, dated copy of the PE document to the LHD when the PE has been distributed. The Certificate of Distribution is included in **Appendix G11**
- ✓ The NCWS shall display the PE in common areas of the buildings served by the water system. Optional posting for drinking water fixtures is found in **Appendix G12**
- ✓ The NCWS shall implement the above steps within 60 days of the end of the monitoring period in which the AL was exceeded
- ✓ The LHD shall enter the date the PE was sent to the NCWS as a violation follow up action using code SIE
- ✓ The LHD should date stamp the receipt of the Certificate of Distribution. Enter the date of receipt of the Certificate of Distribution as a violation follow up action using code SIF
- ✓ Failure to complete PE is a treatment technique violation of the SDWA and must be reported to EPA. **Appendix F31** is a template letter for the LHD to issue the notice of violation. EGLE suggests sending this letter certified mail if you are levying a fine.

PE is required any time the 90th percentile lead sample results exceed the action level in a set of sample results in each monitoring period. The NCWS may discontinue PE if the NCWS has met the lead action level during the most recent 6 month monitoring period.

PE is not required for copper concentrations that exceed the AL.

7.6 Failure to Provide Public Notification

If a system fails to comply with the requirement to post a public notification, the LHD must issue an additional violation. Send the Public Notice Violation Letter (**Appendix G32**).

In SDWIS issue a PN violation. When the system completes the public notification, code the date the system completed public notification as PNx.

Chapter 8

Compliance and Enforcement

The SDWA requires NCWS owners to comply with construction, isolation, operation, monitoring, drinking water standards, and other requirements. Many licensing regulations also require an approved water system as a condition of license. If a NCWS does not comply with the SDWA, it cannot be considered approved. All violations must be followed up in writing with a correction compliance date.

Many factors are involved in assessing water system compliance, proper corrective action, time frame for correction, and whether interim precautions are necessary. Licensing regulations may include differing language on water system relative to issuing a license, restrictions to a license or not issuing a license. A NCWS is approved (or not approved) in accordance with the SDWA.

A NCWS should not be considered an approved water supply if:

- The owner had been notified of water system deficiencies and has not complied with required corrections by the specified compliance date.
- There are one or more outstanding major MR violations, e.g., none of the required samples have been collected for nitrate.
- There is a pattern of chronic noncompliance.
- The water system is in violation of a drinking water standard.
- There is an imminent health hazard.

If an NCWS fails to make the annual fee payment to EGLE it is considered an unapproved NCWS. EGLE may notify the LHD for assistance in gaining compliance.

Proper enforcement policies and procedures are essential when it becomes necessary to obtain compliance. The primacy agreement with the USEPA requires EGLE to take enforcement action when NCWS fail to comply with the SDWA. This authority and responsibility are delegated to LHDs through a contract with EGLE. LHD enforcement procedures may vary widely. EGLE has suggested enforcement processes for LHD in this chapter; however, enforcement actions fall under the policies and procedures of individual LHDs.

8.0 Statutory Authority

Michigan SDWA, Act 399 of 1976

General Authority

Section 3 (§325.1003) of the SDWA states that "subject to limitations of the act, the Department shall have power and control over public water supplies and the suppliers of water." Section 3 also provides the authority to "enter upon the waterworks system of a supplier of water at reasonable times for the purpose of inspecting the system and carrying out this act and rules promulgated under this act."

Administrative Fines

Section 7 (§325.1007) of the SDWA gives the department authority to impose administrative fines to a supplier who fails to comply with state drinking water standards or any monitoring or reporting requirements of the SDWA.

Emergency Authority

Section 15 (§325.1015) requires the department to notify a supplier of water of the need to make changes in operations, to provide treatment, to make structural changes in existing NCWS, or to add additional capacity as necessary to produce and distribute an adequate quantity of water meeting the state drinking water standards. Section 15 also gives authority to the department to implement emergency public health measures if the NCWS poses "an imminent hazard to public health."

Michigan Public Health Code, Act 368 of 1978

"An ACT to protect and promote the public health; to codify, revise, consolidate, classify, and add to the laws relating to public health; to provide for the prevention and control of diseases and disabilities; to provide for the classification, administration, regulation, financing, and maintenance of personal, environmental, and other health services and activities; to create or continue, and prescribe the powers and duties of, departments, boards, commissions, councils, committees, task forces, and other agencies; to prescribe the powers and duties of

governmental entities and officials; to regulate occupations, facilities, and agencies affecting the public health; to regulate health maintenance organizations and certain third party administrators and insurers; to provide for the imposition of a regulatory fee; to provide for the levy of taxes against certain health facilities or agencies; to promote the efficient and economical delivery of health care services, to provide for the appropriate utilization of health care facilities and services, and to provide for the closure of hospitals or consolidation of hospitals or services; to provide for the collection and use of data and information; to provide for the transfer of property; to provide certain immunity from liability; to regulate and prohibit the sale and offering for sale of drug paraphernalia under certain circumstances; to provide for the implementation of federal law; to provide for penalties and remedies; to provide for sanctions for violations of this act and local ordinances; to provide for an appropriation and supplements; to repeal certain acts and parts of acts; to repeal certain parts of this act; and to repeal certain parts of this act on specific dates.”

The Public Health Code can be viewed in its entirety by going to [Act 368 of 1978](#).

Michigan Water Well Construction and Pump Installation Code

Part 127 of Act 368 contains the well construction code and requirements for drilling contractors and pump installers. In addition to private water supplies, it applies to all public water supplies, *except* where requirements of Act 399 (SDWA) are more stringent.

Contains minimum specifications for the location and construction of water wells and associated pumping equipment. The code establishes standards for the materials and methods used to complete water wells, and install pumps, pressure tanks, piping, valves, and controls. Standards for the plugging of abandoned water wells, dewatering well construction and abandonment standards, reporting requirements, minimum qualifications for the registration of water well drilling contractors, drilling machine registration requirements and code enforcement provisions are also covered.

Administrative Procedures Act, Act 306 P.A. 1969

An Act to provide for the effect, processing, promulgation, publication, and inspection of state agency rules, determinations, and other matters...to provide for state agency administrative procedures and contested cases and appeals...” Chapter 4 of Act 306 may be referred to for procedures in contested cases. The entire act can be viewed by going to [Act 306 of 1969](#).

Local Ordinances and EGLE Policies

Local sanitary codes may also be used by the enforcement agency to gain compliance from the NCWS. These procedures may vary slightly, but should not conflict any of the above regulations or EGLE [Policies and Procedures \(michigan.gov\)](#).

8.1 Enforcement Priorities

When compliance is not obtained voluntarily, full enforcement efforts are expected to eliminate imminent health hazards and/or to obtain compliance with federal and state requirements.

- ✓ Imminent health hazard
An imminent health hazard is defined by the SDWA as "... a violation, or a condition that may cause a violation, of the state drinking water standards at a public water system requiring immediate action to prevent endangering the health of people."
- ✓ Violations of an MCL
- ✓ Failure to issue public notice on MCL violations
- ✓ Repeated MR violations

Other deficiencies require making a proper and reasonable effort to obtain compliance. Enforcement should include the initiation of informal enforcement procedures for violations in the following categories:

- ✓ Significant (non-imminent) construction/operation violations
- ✓ Occasional MR violations

LHDs must show due diligence until the noncompliance issue is resolved. Food inspectors, daycare inspectors, and other LHD staff are encouraged to find the water system in noncompliance if the required samples are not taken or any other water system violations are not corrected by the compliance date.

8.2 Voluntary Compliance Methods

Monitoring Violations

Prior to formal enforcement, voluntary compliance should be encouraged through the following methods:

Education

- ✓ Clear and simple education about where, when, and how to collect a water sample.
- ✓ Simple explanations of the reasons behind public health requirements.
- ✓ Both oral and written communication to accommodate differences in learning style.
- ✓ Informative flier or newsletter with useful information and strategies for success.

Personal Communication

- ✓ Frequent telephone or email contact, especially when compliance becomes an issue.
- ✓ Face-to-face communication if messages get lost between multiple employees.

Consistency in Communication

- ✓ Ensure all LHD inspectors are giving the same message about compliance, even those working in other programs.

Warning/Reminder Notices

- ✓ A notice at least one month prior to the end of a compliance period.

Early Target Date Option

- ✓ A preliminary target date around which to focus attention, thereby avoiding the actual deadline. For example, if the actual due date for an annual bacteriological sample is December 31st; the LHD may set the target date for September 30th. These early target dates must be tracked individually by the LHD. The target dates are not deadlines and violations should not be issued. This early target date should not be entered into SDWIS as a “state collection period”.

MCL Violations

Early Warning

- ✓ Inform supplies of potential future MCL violations so the supply can begin to plan for corrective actions early.

Certified Operator

It may be necessary to take enforcement action against a certified operator for failure to uphold the responsibilities outlined in Part 19 of the SDWA. Certificate suspension or revocation may be warranted in documented cases of incompetence, negligence, fraud, and impersonation. In those cases, the role of the LHD should be to identify gaps in water supply oversight, document all situations thoroughly, communicate clear expectations to the operator, and engage with EGLE if the LHD suspects that enforcement may be necessary.

8.3 Enforcement Guidelines

It is important for the LHD to follow specific steps in its efforts to obtain corrections from a NCWS not in compliance. Proper enforcement procedures from the outset will help to ensure a credible case if litigation ensues. Written enforcement procedures should be adopted with guidance from the local prosecutor and board of commissioners. These procedures may vary slightly but should not conflict with the Administrative Procedures Act (Act 306), or the enforcement provisions of the Public Health Code (Act 368) or the SDWA (Act 399). Federal reporting of enforcement actions taken against a water system is required.

8.3.1 Violation Notice

When the supplier fails to comply with the SDWA regulations, a letter of noncompliance must be mailed or delivered to the NCWS owner prior to any other action and must cite the infraction, outline any precautionary measures, indicate the public notification requirements (if they apply), and give instructions along with a timetable for returning to compliance.

MR violation letter examples are found in [Chapter 6](#) (Water Quality) and PN examples found in [Chapter 7](#) (Public Notification) of this document. A form letter for failure to correct a violation is found in **Appendix H01**.

For violations involving construction deficiencies, a follow-up inspection is required to determine whether compliance was in fact achieved.

8.3.2 Informal Consultation

An informal consultation to discuss compliance may be used in conjunction with the violation letter to assist the NCWS in understanding their responsibilities of the SDWA and Act 368. It may also be used to provide technical assistance to the NCWS. This may be done during a visit to the NCWS or via telephone, email, etc. Informal meetings should be scheduled at the local level, and EGLE staff is available to attend the meetings if requested. This meeting provides a forum for the NCWS and LHD to discuss and resolve the problem. A Notice of Violation letter must provide the details of the violation, cite the law, and provide a date, time, and location for the informal conference. EGLE participation in the informal meeting is required in order for the next step to be effective.

8.3.2 Significant Deficiency Violation Notice (SDVN)

If the LHD finds a SD during a survey, the notice is written into the survey letter. A SDVN can also be used to gain compliance for issues that arise outside of a sanitary survey inspection. EGLE staff will assist the LHD in drafting a SDVN.

8.3.3 Escalated Enforcement Actions

Once the LHD has given written notification of a violation to the NCWS, and the NCWS fails to return to compliance, the LHD is expected to pursue escalated enforcement actions. EGLE Policy DWMAD-399-029 Escalated Enforcement Action (**Appendix H08**) should be consulted.

- **Consent Agreement (ACA)**
A consent agreement is a document signed by the supply owner outlining the owner's responsibility (sampling, construction, etc.) and their promise to comply with all further SDWA and Part 127 requirements. Consent agreements arising out of informal meetings should be issued by the LHD. It cites the specific violations and the rules of law bearing on the violations in addition to the issues discussed in the informal conference. The agreement also describes what must be done to achieve compliance and provides an appropriate timetable for achieving compliance. In addition, the agreement should advise the NCWS of the option to request a contested case hearing within 30 days.
- **Referral to Attorney General or Local Prosecutor**
If the NCWS does not comply with the consent agreement the regulatory agency may refer the case to the Attorney General or local prosecuting attorney's office. Prior to turning a case over to a local prosecutor, it is recommended that the LHD put together a chronology of events and actions taken. This will familiarize the prosecutor with the case and assure that everything possible has been done by the agency prior to the case being advanced to the courts.
- **Stipulated Penalties**
An administrative fine may be issued at any time for subsequent violation after a NCWS has been notified in writing of the possibility of fines should they fail to comply with sampling requirements. The LHD may use SDWA fine system described in [section 8.5](#) or may issue fines using their own fee schedule. Administrative fines are also used for failure to take adequate measures to prevent or correct problems related to a violation of State drinking water standards, e.g., an MCL violation. It is important that the LHD understands that fines should not be issued if the LHD did not first show due diligence in trying to gain compliance via an informal consultation on the phone or in person.

8.3.4 Enforcement Agencies Available

When enforcement or communication regarding potential enforcement becomes necessary, all available options should be reviewed. Licensing or regulatory agencies should be kept abreast of compliance violations. Many times, other agencies can assist or directly participate in the enforcement action. A safe and properly constructed water system may be part of licensing requirements for other agencies.

Township and County Agencies

Plumbing department, Building department, County sanitary code

State Agencies

Department of Agriculture and Rural Development (MDARD)

Food service, retail food

Department of Health and Human Services (DHHS)

Chiropractic, dentistry, medical, optometry, veterinary

- Day care, child camps, adult foster care
- Department of Environment, Great Lakes, and Energy (EGLE)
 - Water Resources wetlands, floodplains, critical dunes
 - Remediation and Redevelopment
 - Pools, campgrounds
- Department of Licensing and Regulatory Affairs (LARA)
 - Manufactured housing, hospitals
 - Bureau of Construction Codes (plumbing and electrical)
 - Liquor Control Commission
- Cannabis Regulatory Agency (CRA)
 - Cannabis manufacture, processing, and sale
- Michigan Occupational Safety and Health Administration (MIOSHA)
 - Workplace safety and health

8.4 Enforcement Targeting Tool List

The USEPA enforcement targeting tool (ETT) is used to identify and prioritize NCWS for enforcement. The ETT assigns each violation a point value based on the EPA-assigned severity level or threat to public health.

The ETT formula provides a method for identifying NCWS having the highest total noncompliance across all rules, within a designated period. The formula calculates a score for each NCWS based on open violations and violations that have occurred over the past 5 years. It does not include violations that have returned to compliance or are on the path to compliance through a specified enforcement action.

Since these are priority targeted NCWS, the LHD must show due diligence to return the NCWS to compliance. It is expected the LHD will stress the importance of compliance and eliminate the NCWS from the ETT list. It is in the LHD's interest to be proactive before a NCWS reaches an ETT score of 11 making it a priority system appearing near the top of the list.

Quarterly, EPA meets with EGLE to review progress toward returning priority systems to compliance through formal enforcement. EGLE usually contacts the LHD for additional information on enforcement of priority systems.

8.5 Administrative Fines

Administrative fines are established in the SDWA, §325.1007 for those NCWS that fail to comply with drinking water standards, public notification, and monitoring and reporting requirements. The fines are to be used as a tool for EGLE and their authorized agents to promote compliance and meet regulatory enforcement responsibilities.

NCWS that fail to meet monitoring or reporting requirements; NCWS that fail to report analytical results or other required information; failure to issue public notification, following a monitoring violation, are examples of violations subject to fines.

A fine may be issued at any time in the enforcement process if the NCWS has been previously notified in writing of the consequences. The LHD may use EGLE fine system as specified in policy **Appendix H07** ODWMA-399-001 Administrative Fines for Monitoring and Reporting Violations in Community and Noncommunity Water Supplies or may issue fines using their own fee schedule. Fines procedures are found in ODWMA-399-012 Administrative fines – Violation of State Drinking Water Standards **Appendix H07.1**. Contact EGLE for further information on issuing fines.

Chapter 9

State and Federal Reporting

Michigan's primacy agreement for implementation of the SDWA requires reporting of information to the Federal government. Michigan contracts with LHDs to implement the NCWS program. As part of their contractual responsibilities, the LHDs are required to report NCWS inventory updates, violations, and enforcement activities 15 days after the end of each quarter.

LHD staff should update and review the database daily ensuring data is up to date and NCWS are receiving the proper amount of oversight.

NOTE: EGLE and LHDs are transitioning from WaterTrack to SDWIS and supporting applications at the time of this publication. The reporting of NC data is evolving. This chapter provides available processes at the time of publishing. Consult with EGLE or use updated guidance from Teams during the transition until a new NC manual is published.

Daily

Enter private lab sample data, process positive coliform samples. Update any changes to NCWS that have been communicated; e.g., contact information, population or annual operating period, schedules. Complete and submit sanitary surveys in SWIFT.

Weekly

Review MORs, update monitoring schedules.

Monthly

Review possible MCL violations, enter MOR, update follow up actions.

9.0 Quarterly Reporting

Quarterly reporting is a MPR in EGLE Cost Sharing Agreement with the LHD. The release of quarterly payments is based on timely submittal and accurate reports showing satisfactory and appropriate action NCWS program oversight. The contract requires LHDs maintain an updated inventory, records for reporting water quality monitoring violations, sanitary survey inspections and compliance status, issuance of well permits, monitor MCL violations, and issuance of public notice. The LHD must report ***within 15 days following the end of the quarter*** electronic transfer of required data to EGLE.

The SDWIS database is maintained by the USEPA. This database is a method of tracking regulated PWS, violations, and enforcement actions nationwide. In turn, this information is made available to the public. Information is used by Congress to help formulate safe drinking water legislation, and by the USEPA to respond to emergencies, administer its programs, evaluate state programs, and allocate state grant funds.

The public has access to data via USEPA web sites like [Envirofacts](#).

The connection between data upkeep and the release of quarterly payments to LHDs, the integrated nature of State and Federal databases, and the ease of public access to information in these databases, make the management of data by LHD a vitally important function.

Violations and enforcement actions are reported in SDWIS.

9.1 Steps to Quarterly Reporting

The following procedure is used for processing quarterly payments. An FSR is submitted to the EGLE administrative unit by a financial contact from the LHD. A secondary email is sent to EGLE-DWEHD-SDWIS@michigan.gov by the noncommunity coordinator requesting a review of SDWIS and SWIFT data before the 15th of the month following the last day in each quarter. The following subject line and text can be used as a guide:

Subject: LHD Request for Quarterly Review—FY16Q4

Body: LHD has completed data entry for quarterly reporting and requests review for the 4th quarter, July – September 2016.

Following review of records, an EGLE representative will respond indicating data entry changes (if any) that need to be addressed. Following changes, payment will be processed.

Include any additional requests or special instructions for EGLE in the body of the email.

The general steps for quarterly reporting are as follows:

1. LHD completes all contract required work and enters data into SDWIS and SWIFT during the quarter. Use the Quarterly Review Checklist for LHD to ensure complete quarterly data before requesting payment.
2. LHD sends email within 15 days after the end of each quarter, reporting that quarterly work is complete, and requests payment. It may be necessary for additional clarification within the email for any issues to assist EGLE reviewer.
3. EGLE reviews the data to ensure work is complete. If any concern is noted, the LHD is advised of needed corrections. Once the work is complete, EGLE approves payment with EGLE accounting office.

The following list of the quarterly data submission minimum requirements:

- Inventory Updates
- Monitoring, public notice, treatment technique, and MCL violations
- Enforcement actions
- Lead/copper AL exceedance and enforcement actions
- Sanitary Surveys
- Seasonal system start-up procedure review

9.2 Preparing for Quarterly Reporting

Surveys

Adjustments to NCWS names and addresses, populations, service connections, operating season, activity status and use characteristics, well, pump, and distribution system changes, isolation, treatment, and monitoring frequency records are being made by LHDs throughout the quarter. Complete and submit all surveys in SWIFT. Use the SWIFT dashboard to review surveys that are past due.

Violations

Update existing MCL violation records

Check lab results for exceedance of the drinking water standards on a daily basis. Most MCL violations are generated during the quarter, not when the quarter is over. End-of-quarter record upkeep should typically be limited to updating the database with the most recent follow-up activity.

Monitoring

Record approved MORs.

Preview Candidate MR Violations

Many of the activities described involve searching for and correcting water sample records that were not properly attributed to the NCWS in SDWIS. LHDs try to minimize violations and the associated enforcement by “cleaning up the data”. This can be time consuming but may be a good trade off compared to issuing a violation.

Monitoring Violations

Once all samples are entered, run the report again for the purpose of migrating all reportable violation records.

Add Follow-Up Actions

Update each violation with appropriate enforcement or other follow-up actions. Refer to **Appendix I01** and [section 9.3](#) for follow up code descriptions and uses. All violations should have an SIA and SIE code.

Return to Compliance (SOX) Violations

Apply the Returned to Compliance (SOX) code for any appropriate violation. Every violation should eventually be closed with a Returned to Compliance (SOX) follow-up action.

Request Quarterly Payment

Once all the violation reports show no candidates, send an email to EGLE and CC: EGLE District Representative, requesting payment for the quarter in which work was performed.

9.3 Violation Follow-up Action and Enforcement Codes

Due to the national scope of the SDWIS program, strict codes and data structures are necessary for managing data. LHDs will need to know many of the federal codes and data requirements and how to use them.

Follow-up or enforcement actions must be recorded for RTCR, LCR, GWR, MR, and PN violations. Every violation entered in SDWIS is expected to have follow-up action or enforcement codes, and dates associated.

The middle letter of the follow-up action codes is a severity indicator, “I” means informal, and “F” means formal. Formal codes are used rarely. Codes that have “O” as a middle letter are neither informal nor formal. Rather, they indicate the status of the violation, e.g., unresolved, closed, or no longer applicable.

At a minimum three codes should be used for each violation (SIA, SIE/SIF, and SOX). The highlighted codes below will be used most frequently.

SIA Violation Notice or Notice of Noncompliance

To be used when the LHD does any of the following:

1. Alerts the NCWS verbally and/or in writing that a violation has occurred.
2. Informs the NCWS about required precautionary measures and corrective action (applicable to MCLs only).
3. Provides language for a public notice for posting.

SIB Informal Meeting to discuss violations and compliance

Informational meeting to discuss violations that have occurred and ways of achieving compliance. This meeting may take place at the water system, in the office or on the phone. Not to be confused with an informal meeting to discuss enforcement.

SIC Technical Assistance Visits

When requested, technical assistance is provided to the owner/operator by the LHD to help the supply return to compliance after a violation.

SID Enforcement Site Visit

Site visit to attempt to confirm or discover additional violations. Could include collection of chain of custody samples or discussion of potential penalties.

SIE Public Notice Requested

When the LHD mails or delivers the PN to the NCWS.

SIF Public Notice Returned

The NCWS owner/operator signs and posts the notice and returns a signed copy to the LHD for the file.

SO6 Intentional No Action

When approval is given to operate a water system where nitrate concentrations persist between 10 and 20 ppm, as per Rule 325.10604c(3). (This code should be used infrequently)

SO7 Unresolved MCL Violation

Where there is an unresolved MCL in a supply still in operation and further action is expected to bring the supply back into compliance. Also used where a seasonal NCWS closes with an MCL (please don't use SO6). It is especially important to include an up-to-date comment with any SO7.

SOX Water Supply Returned to Compliance

1. A water supply with an outstanding MR violation is now monitoring in accordance with its established monitoring frequencies. It is vital that all MR violations are SOX'd as soon as possible, to prevent the supply from becoming a targeted system for enforcement.

2. When subsequent sampling of a water supply with an MCL violation has shown that it is now operating below the MCL and is back in compliance with a drinking water standard.

SOO	No Longer Subject to Rule NCWS changed classification so that a rule for which it was in violation no longer applies in the new classification. An example is where a NTNCWS in violation for failing to collect lead/copper samples is now classified as a TNCWS.
SFJ	Formal Notice of Violation When a formal notice is issued to a supply that is in violation of a drinking water requirement. This document is usually issued in conjunction with other formal enforcement activities, such as informal hearings, compliance agreements, etc. The Notice of Violation will cite the violations and may state a time and place in which the informal hearing will take place, as well as the dates by which corrective actions must be taken.
SFG	Public Notice <i>If a NCWS owner/operator refuses to post a notice, or if the threat to public health is great, the sanitarian can <u>issue</u> the public notice, posting it him/herself, and providing the owner with documentation that cites the violation. The SDWA also has provisions for public notification through the media if appropriate. Note: If the LHD routinely posts these notices, then SIE and SIF are used.</i>
SFK	Compliance Agreement Signed An agreement signed and dated by both the LHD and the water supply that contains a schedule to return the NCWS to compliance.
SFL	Administrative Order Issued without Fine An order issued by the LHD as part of a compliance agreement that orders the supply to come into compliance or undertake remedial actions.
SFM	Civil/Administrative Penalty (Fine) Issued A monetary penalty assessed by the LHD in response to a violation of the regulations or a failure to take actions ordered by the primacy agent to achieve compliance.
SFN	Show Cause Hearing (with consent agreement) A hearing held to provide opportunity for the violator to present information to the agency and the public on its reasons for not complying with the SDWA. Such hearings often result in compliance agreements or other formal actions.
SFO	Administrative Order with Civil Fine Use when an administrative order has been issued in association with a civil monetary fine by the LHD or EGLE.
SFP	Preparation of Referral to Attorney General or Local Prosecutor Used when the LHD is preparing documentation to refer a NCWS.
SFQ	Referral to Attorney General or Local Prosecutor To be used when a case has been referred.
SFO	Administrative Order with Civil Fine Use when an administrative order has been issued in association with a civil monetary fine by the LHD or EGLE.
SFP	Preparation of Referral to Attorney General or Local Prosecutor Used when the LHD is preparing documentation to refer a NCWS.
SFQ	Referral to Attorney General or Local Prosecutor To be used when a case has been referred by EGLE.

9.4 State vs. Federal Violations

Per Rule 325.10732 of the SDWA, the LHD has the authority to set early monitoring deadlines to avoid federal violations. The LHD may take enforcement action against a NCWS for violating the early deadline, but the

violation cannot be reported to the USEPA. For example, if the LHD requires that a routine metals sample be taken by the end of the first year in a 3-year monitoring cycle, failure to sample by the end of the first year is not a federal monitoring violation.

9.5 EGLE Oversight of Quarterly Reporting

Satisfactory and appropriate action toward meeting the MPRs, as documented in SWIFT and SDWIS, is ensured through EGLE quarterly data review. The quarterly review of records focuses on the following general categories:

1. Inventory and addresses
2. Permits, sanitary surveys, follow-up on construction issues
3. Certified operators and MORs
4. Monitoring frequency set-up
5. MCL and MR Violations
6. Assessment triggers
7. Follow-up on violations and enforcement

EGLE oversees the work by running reports to check for completeness, accuracy, and timeliness of the information in SDWIS.

LHD funding and major program decisions are based on data entry into the database, so prompt and accurate updates to records are very important.

Chapter 10

Operator Certification

The SDWA rules (*Part 19*) require certified drinking water operators for all NTNCWS and for transient NCWS that employ certain water treatment processes. Operators must be certified at a level equal to or greater than the classification level of the water system.

10.0 System Classification

All NTNCWS and transient NCWS with limited or complete treatment are classified with an alphabetic class and a numerical level. The water system class is based on the source of water, level of treatment, and scope of distribution. Within the three system classes are 5 numerical levels based population served (*Rule 325.11901*).

Table 10-1 Classification of Systems

CLASS	Definition / Description
F	NCWS using surface water, groundwater under the direct influence of surface water, or any system with complete treatment. A complete treatment system means that disinfection and filtration function together to produce finished water that meets the requirements of the SDWA. Complete treatment might also include coagulation.
D	NCWS with limited treatment. Any chemical treatment of the water for public health reasons or where chemicals are being injected that, if misused, could put the public at risk.
S	NCWS distribution systems and no regulated treatment. No chemical treatment of the water for public health reasons. No treatment (such as chemical injection) that, if misused, could affect public health.

F water system classification

Examples of complete treatment include:

Disinfection, coagulation, and filtration of surface water

D water system classification

Examples of limited treatment to meet a drinking water standard, health concern or inject chemicals are:

Disinfection (chlorine, ozone)

Iron Removal

Ion or Anion Exchange (arsenic, nitrate)

Phosphate

RO for health-based treatment

Filtration other than complete treatment (greensand)

S water system classification

Examples of treatment that do not require a D treatment classification:

Conventional ion exchange softening

Sediment or carbon filters

Ultraviolet light

RO for aesthetic purposes

Treatment not used for meeting DW standards (without chemical injection)

10.1 Operator Classification

A certified operator may operate any waterworks system within a classification at or below the level of their certificate.

Certified operator means an “operator of a public water supply who holds a certificate.” The “Operator in Charge” (OIC) is a properly certified operator who is designated by the owner of the NCWS as the responsible individual

in overall charge of the water system, who makes decisions regarding the daily operational activities of the NCWS that will directly impact the quality or quantity of the drinking water being supplied.

10.2 Operator Oversight and Standards

The following criteria has been established to define the minimum oversight acceptable for NCWS during standard operation and/or when the OIC leaves. If a reduced frequency is allowed, written approval of certified operator oversight frequency should be maintained with the water supply's file. Use **Appendix J08** to document for the file.

F-5 Systems: During standard operation an OIC shall be employed by the NCWS, make daily visits to the system, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. For certain F-5 treatment plants with acceptable oversight and a plan in place for the proper operation of the plant when the operator in charge is not available (such as a trained person on site who can perform the daily duties), standard operation by the OIC may be reduced to weekly per approval of EGLE. System performance should be considered in the decision to reduce standard operation. This approval shall be in writing and re-assessed when either the operator leaves the NCWS, or if system conditions require increased operator oversight. For interim operation when an OIC is no longer available, it is acceptable to provide the supply time to recruit a replacement or promote a staff member to fill the OIC position. During this interim period, the supply must retain a temporary certified OIC to visit the treatment system daily (EGLE may approve weekly visits) and be responsible for its daily operation.

D-5 Systems: During standard operation, an OIC shall be employed by the water supply, make weekly visits to the water treatment plant, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. Per ODWMA Policy 399-017 (**Appendix J07**), if a NCWS has acceptable oversight and has a plan in place for the proper operation of the treatment system when the OIC is not available (such as a trained person on site who can perform the daily duties), standard operation may be reduced to twice per month per approval of the LHD supervisor. The standard operation for certain D-5 treatment systems may be reduced to once per month with the approval of the LHD supervisor. System performance should be considered in the decision to reduce standard operation. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight. Interim operation when the OIC is no longer available is the same as the "standard" operation above.

S-5 Systems: During standard operation, an OIC shall be employed by the NCWS, make monthly visits to the NCWS, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. If a NCWS has acceptable oversight and has a plan in place for the proper operation of the waterworks system when the OIC is not available (such as a trained person on site who can perform the daily duties), standard operation may be reduced to once per quarter per approval of per month per approval of the LHD supervisor. System performance should be considered in the decision to reduce standard operation. This approval shall be in writing and re-assessed when either the OIC leaves the supply, or if system conditions require increased operator oversight.

10.3 Standard of Performance for Operators

The certified operator is more than a person who simply shows up occasionally to collect a water sample. The minimum duties include, but are not limited to:

1. Collect water samples at required frequencies. This function can be delegated to a trained individual at the NCWS.
2. Keep records and submit reports.
3. Execute precautionary measures and posting of Public Notices as needed.
4. Visually check the well head, pressure tank and pumping equipment. Inspect treatment equipment. Check the system for leaks or other problems. Look for cross connections or potential cross connections. Inspect the cross connection control devices.
5. Treatment operators shall inspect treatment equipment for water quality purposes and measure water quality as directed in the treatment permit and operation manual.
6. Ensure that the testable backflow devices are tested on the prescribed schedule by a certified tester.

10.4 Operator Certification Procedure

Complete and mail an exam application to the [EGLE Operator Certification & Training Unit](#). The application must be received by EGLE not less than 45 days before the announced examination date.

The requirement to sit the S Level exam is that the person has a high school diploma or GED equivalent.

D Level and F Level exams qualifications require additional education and/or experience.

Persons passing the exam with a 70% or higher score will receive a certification document indicating their operator identification number and expiration date.

10.5 Continuing Education and Renewal of Certificates

All operators need to complete continuing education and pay a fee to renew certificates. Operator certificates are valid for three years. Within that three-year period, NCWS Level 5 operators are required to obtain a minimum of nine hours of EGLE approved continuing education credits (0.9 CECs).

If an operator's certificate expires, the person must reinstate the certificate within one year, after which they must pass the examination again. A water system is not allowed to be without a certified operator for the interim period.

CECs are prorated from the certificate's expiration date. An additional 0.1 CEC requirement is added each quarter.

Table 10-2 CECs Required for Reinstatement

Quarter after Certificate Expiration Date	Number of CEC's Required
1 st	0.9
2 nd	1.0
3 rd	1.1
4 th	1.2

10.6 System Compliance

Rule 325.11906b(2) states that the owner of the NCWS shall notify the LHD within 7 days when the supply no longer has the services of an operator and when a new operator is employed.

If a NCWS does not have a certified operator, or, if the operator's certification expired, the LHD must send a notice of noncompliance. The NCWS is required to hire an operator certified with the appropriate level of certification in an appropriate time frame. The rule requires the NCWS to always have a certified operator.

S-5 System

If the NCWS has no treatment, has a history of overall good compliance for all other rules, and there are no current problems with the system, EGLE has supported giving the NCWS time to take the next available operator exam to get certified. They must submit proof to the LHD that they applied for the exam.

Initial contact may a telephone call, but written documentation should follow. **Appendix J02** is an example first notice of violation.

Treatment System

If a treatment system is installed to comply with water quality rules, the NCWS is required to hire an appropriate certified operator. If the treatment system is for aesthetic purposes, the LHD may give up to one month for the NCWS to hire a certified operator. **Appendix J03** is an example of a first notice of violation.

Continued Noncompliance

If the NCWS does not comply the LHD must issue a violation and PN. **Appendix J04** is an example of a second notice of violation. The NCWS should no longer be given reduced monitoring privileges. Bacteriological monitoring should revert to monthly frequency. If the NCWS is treating for water quality issues, the LHD is authorized to require increased sampling for the contaminant. If the NCWS continues to be in noncompliance after the LHD has issued notices of violation, the system should be referred to EGLE for escalated enforcement.

The SDWA does not provide a rule for issuing a fine for failure to employ a certified operator.

10.7 Database Maintenance

You can look up certified operators by name in the [Operator Certification](#) database online.

Verify SDWIS has an operator of record (OIC). Refer to SDWIS Desk Guides for instructions on connecting legal entities to water systems.

Chapter 11

Treatment

NCWS in Michigan generally rely on proper well construction and isolation to supply safe water without treatment. However, treatment is sometimes installed for public health or aesthetic reasons. It is important to know when a treatment permit is required. When a safe source is not an option, certain treatment techniques may eliminate or reduce the amount of contaminant in the water to a safe level. An investigation into an alternate permanent safe water source, like drilling a new well or connecting to municipal water, must be completed before regulated treatment will be considered. There are two common reasons for drinking water treatment; 1) when required for public health purposes such as removal of inorganic contaminants or biological pathogens; or 2) a desire to improve the water's aesthetic characteristics. Treatment systems require continuous oversight from system owners and certified operators to ensure they are functioning properly.

Water is the universal solvent and carries all types of dissolved materials as well as biological life forms, some of which can cause diseases. The USEPA has set standards for those substances known to be hazardous to human health. If any of these substances exceeds the MCL, something must be done to either rid the water of this substance, or to find a new safe source. Obtaining a source that meets drinking water standards is preferable to treating a source that does not meet standards.

§325.1015, Section 15 of the SDWA states “when necessary for protection of the public health, the department shall notify a supplier of water of the need to make changes in operations, to provide treatment...as necessary to produce...water meeting the state drinking water standards.”

Treatment systems requiring a permit fall into 2 categories; limited treatment and complete treatment. Limited treatment includes NCWS that remove a specific contaminant from the water (e.g., arsenic, nitrate) or inject chemicals into the water supply. Complete treatment includes both filtration and disinfection and is required for source water such as surface water or groundwater under the direct influence of surface water. These NCWS are also called “Subpart H Systems” due to the location of the requirements in federal regulations.

11.0 General Rules on Treatment

Section 13 of the SDWA, and Part 21 of the Administrative Rules contain requirements for equipment and chemicals used at NCWS in Michigan. Water treatment components that come in contact with the water must be certified to meet the ANSI/NSF 61 standard. Chemicals that are injected must be certified to meet the ANSI/NSF 60 standard.

Rule 313(2)(c)(ii) requires the use of certified water treatment units when prefabricated treatment units are used. POU RO are certified to the NSF 58 standard and ultraviolet light water treatment units are certified to the NSF 55 standard. NSF 42 and NSF 53 are two other standards commonly found in aesthetic treatment devices. These alternate NSF standards for water treatment units (NSF 42, 53, 55, and 58) contain a leach standard that is equivalent to the NSF 61 certification used for equipment components.

Rule 308b identifies best available technology for achieving compliance with the MCLs for different contaminants.

R 325.10402, Rule 402 indicates that a tier 1 public notice is required if the water treatment process for public health requirements is interrupted or not working properly.

Rule 313 allows the use of POE or POU treatment.

Backwash Water

If the water treatment backwash water discharges into a sanitary sewer system, the sanitary sewer must be evaluated to determine if it is able to accept the full flow of the disposal stream. If the system can handle the contaminant loading and not cause the wastewater treatment system to exceed discharge standards, no further assessment is necessary. If there is a mass loading concern, it may be necessary to install holding facilities to “bleed” the residual into the system. Connection of the discharge to the local sanitary sewer should be discussed with the local authority prior to connection.

Backwash water discharged to a surface water body will require a NPDES permit. Information on how to apply for a NPDES permit can be obtained at the [How to Apply for an NPDES permit website](#).

Due to concerns about contaminants being released back into the groundwater above Part 201 residential cleanup standards, subsurface discharge will usually require a permit from EGLE unless an exemption is granted. The Part 22 Rules that regulate discharges to the groundwater of the state, promulgated pursuant to Part 31 of NREPA, cite the following discharges are exempt from a groundwater discharge permit: "Water treatment filter backwash water if disposal is in accordance with plans and specifications approved by the department under Act No. 399 of the Public Act of 1976, as amended". To be eligible for an exemption, documentation must be provided to EGLE indicating that an assessment has been completed of the backwash water being discharged to the groundwater, and that it will meet Part 201 residential cleanup standards or background levels in the receiving groundwater, whichever is greater. A monitoring well(s) may be required to be installed below or near any holding lagoon if it is felt that the contaminant is leaching into the groundwater due to unique conditions.

Before discharging to an existing septic system or other on-site facilities, the volume, frequency of discharge and hydraulic impact on the system should be assessed. The discharger would also have to follow the same evaluation process as described above for the seepage bed/lagoon option to determine if they qualify for an exemption or need a permit for the backwash water discharged.

11.1 Permitting

A permit is required when treating the water supply to meet a standard such as an MCL or for public health concerns. Treatment systems that inject treatment chemicals into the water supply for any purpose also require a permit. Examples of chemical injection includes, but is not limited to:

1. continuous disinfection with chlorine, ozone, or any other disinfectant;
2. fluoride addition;
3. phosphate injection to sequester iron or prevent leaching of lead or copper;
4. pH adjustment; and
5. potassium permanganate or chlorine used in a continuous regeneration configuration with Greensand iron removal equipment.

A permit is not required for treatment not required by the SDWA if that treatment does not inject chemicals into the water supply. Examples of water treatment that does not require a permit include ion exchange water softening, particulate filters, carbon filters, ultra-violet light, and reverse osmosis when used for aesthetic reasons only.

In general, a permit is required:

- Before treatment equipment to meet a health based standard may be installed
- To inject treatment chemicals into the water supply
- Before existing well modifications or alterations occur
- Before existing treatment equipment for water quality purposes is altered

A permit may be required for other water supply system alterations, modifications, or additions such as well pump replacement, in accordance with the SDWA. If an LHD finds an unpermitted treatment system during a routine site visit, an example cease and desist letter is available as **Appendix K17**.

11.2 Treatment Permit Process

The treatment permitting process is complex and requires the assistance of the EGLE engineering unit. To begin the process, an NCWS should apply to the LHD, who reviews the application package for administrative completeness. The LHD then forwards a complete application package to EGLE (both the area analyst and the assigned engineer). Treatment system permit applications are found on the [Installing Treatment website](#). An overview of the process from application to approved treatment can be found in **Appendix K18**, which also serves as a checklist for LHDs.

A permit for treatment is required before construction begins. A complete application package includes:

- ✓ Application form

- ✓ Plans
- ✓ Specifications
- ✓ Operation and Maintenance Manual.
- ✓ A contingency plan, compliance agreement or other documents may also be necessary.

After receiving the application, an EGLE engineer will review the application and work with the water treatment system installer, NCWS and LHD to ensure the application meets the requirements of the SDWA. When the application is determined to meet all requirements of the SDWA, the EGLE engineer will notify the LHD to recommend issuance of a permit.

The LHD is responsible for issuing the permit to install, performing final inspections and final approval to operate the equipment. An example treatment permit letter can be found in **Appendix K15**, and an example final approval letter can be found in **Appendix K16**. EGLE staff from the both the engineering unit and noncommunity unit will make reasonable attempts to be onsite during the final inspection.

Startup Requirements

Before a new treatment system can be placed into operation, the following steps are required:

- ✓ Two non-detect total coliform samples collected at least 24 hours apart
- ✓ At least one certified lab results of treated water showing levels below the MCL for the analyte under treatment
- ✓ Final inspection and approval to put the system into service by LHD
- ✓ Lead and copper testing may be increased if the treatment is considered a “new source” of water.

Treatment verification through certified lab or field kit testing as described by the permit is required for a minimum of 6 months (weekly or monthly), followed by quarterly treated water monitoring if treatment is used to meet the MCL. Annual raw water monitoring of the target chemical may also be recommended.

Monthly Operation Report (MOR)

MORs are required from NCWS employing treatment. MOR are due within 30 days of the end of the month. MOR's which include chlorine residuals are due within 10 days of the end of the month. A reporting violation (**Appendix F08.1**) should be issued to a supply when MORs are not turned into the LHD in a timely manner.

MOR Requirements:

- Weekly visual check
- Flow meter readings at the beginning and end of month
- Quarterly sample analysis at a certified laboratory

Additional requirements for chlorine and potassium permanganate

- Measure chlorine residual weekly with a field test kit
- Routine coliform at raw water tap with routine coliform distribution sample(s)

NCWS requirements for obtaining a certified operator, submitting MORs, and operating and maintaining the equipment are required in the SDWA. MORs for common treatment systems can be found in **Appendix K01** through **Appendix K08**.

11.3 Treatment Surveillance Visits

NCWS that provide treatment to meet drinking water standards or that inject chemicals into drinking water are more complex and have additional operation and reporting requirements. These NCWS need periodic surveillance site visits in addition to the review of MORs. In accordance with the Allocation schedule for Noncommunity Program Contract, the surveillance visits are to be conducted within the Contract Year, i.e., by September 30, at the following frequencies:

- Arsenic Bottled Water Treatment Alternative – 1 visit every 3 years
- Nitrate between 10 and 20 mg/L with approved continuous posting – 1 visit every year
- D level treatment (chlorine injection, arsenic, or nitrate removal, etc.) – 1 visit every year
- F level treatment (treatment for surface water or groundwater under the direct influence of surface water) – 2 visits per year.

These site visits are not meant to replace a sanitary survey. The purpose is to assist and help build a relationship with the operator, confirm that regulatory requirements are being met, and the treatment system or approved alternative provides a continuous supply of water meeting drinking water standards.

The following outline can be used as a general list of items to review and discuss with the operator. Depending on the type of treatment, not all items will be applicable.

Office – Record Review

- Review the file and permit to become familiar with the type of treatment system and requirements.
- Check to make sure the treatment system information is entered correctly into the database.
- Review recent MORs and sample results for compliance.
- Review any notes from previous site visits

Onsite – Review of Treatment or Bottled Water (checklist available in SWIFT)

Introduce yourself and explain this is a routine visit to look at the treatment in operation, discuss any issues, and answer any questions the operator may have. At a minimum, the LHD shall verify:

- The treatment equipment (pumps, filters, meters, gauges, etc.) are in working order.
- Equipment matches the permit.
- Proper chemicals are available, used, stored, and labeled.
- Adequate supplies on hand (including bottled water for BWA sites).
- Test kits on site.
- The operator can verify the status of all sample tap/testing locations.
- The operator can perform a routine test (chlorine residual).
- The current MOR is onsite and up to date.
- The operation and maintenance manual is available on-site.
- If they are having problems with any equipment or whether repairs/upgrades are needed.
- They have an up-to-date contingency plan in case of equipment failure (especially for F level).
- Permanent signs are posted at untreated drinking water outlets (POU or Bottled Water Alternative sites only).

Documentation and Follow-up:

Treatment Surveillance Visits and approved alternative visits shall be recorded in SWIFT. The water supply should be provided with the report outlining any changes required before the next annual visit. The SWIFT template is shown in **Appendix K12**.

11.4 Limited Treatment

Limited treatment is the classification for any type of treatment that requires a permit and is not complete treatment. Examples of limited treatment are arsenic removal, nitrate removal, and Greensand iron removal. NCWS limited treatment systems require at least a D-5 level certified operator and submittal of MORs. Limited treatment may also include the removal of undesirable substances simply to improve taste, odor, or color.

The LHD staff should always use professional judgment as to whether a permit is necessary. NSF 61 certified equipment must be used at all NCWS even when a permit is not required.

11.4.1 Water Softening (ion exchange)

The most used treatment in NCWS is ion exchange to remove hardness. A permit to install a water softener treatment unit is not required if there is no chemical injection. An air gap is required at the discharge end to avoid a cross connection.

11.4.2 Activated Carbon Filtration and Cartridge Filters

Activated carbon and cartridge filter treatment units may be used to reduce organics or other contaminants that may cause offensive tastes and odors. Care must be taken to routinely maintain all filtration devices to prevent bacterial growth and potential health issues. All components must meet the NSF 61 standard.

11.4.3 Oxidation and Filtration

Several types of treatment inject an oxidant such as sodium hypochlorite or potassium permanganate to oxidize a soluble contaminant into an insoluble solid and then filter out the solids with a back-washable filter. Iron and manganese treatment with Greensand Filtration units are common examples. Oxidation of hydrogen sulfide is another example of this type of treatment. These units require a “**backwashing**” cycle to remove the precipitated solids from the filter. Backwashing wastewater may require a permit to discharge to the environment or to a sanitary sewer system. EGLE advises against discharging backwash to an on-site sewage system.

Injection of the oxidant may occur either before the filters (continuous regeneration) or only during the backwash/regeneration cycle (intermittent regeneration). The continuous regeneration configuration always requires a permit, D-5 level operator, and submittal of MORs because they leave a chemical residual in the treated water. The intermittent regeneration configuration only needs a permit, D-5 operator, and MORs if used to meet an MCL such as arsenic since chemicals are only used in the backwash cycle and no chemical residual is left in treated water. These treatment systems can be complex. Maintenance and monitoring of these units is essential.

11.4.4 Chlorine Injection

Chlorine can be injected into a biologically safe source water to control organism growth in an extensive distribution system, oxidize contaminants, or prevent organism growth when phosphate is injected. If total coliform positives are observed in the distribution system but not in the raw water, a chlorine injection system may be proposed to control the growth of bacteria in the distribution system. Simple chlorination by injecting liquid chlorine (sodium hypochlorite) to disinfect a biologically unsafe source is not allowed. A biologically unsafe source either needs to be abandoned or treated with complete treatment. A simple chlorination system would not be approved to remedy a problem with E. coli or other fecal indicators.

Chlorine can be injected to oxidize contaminants such as iron, manganese, or hydrogen sulfide. A back-washable filter is usually installed when chlorine is used as an oxidant to filter the oxidized solids out of the water.

Chlorine addition is required whenever phosphate is injected into a water supply since phosphate is a nutrient and tends to promote growth of bacteria in the distribution system.

System Design

Chlorine injection systems typically consist of a variable-speed, positive-displacement pump (peristaltic or diaphragm) that injects liquid chlorine into the water line. The chemical injection pump is wired into the pressure switch in such a way that the chlorine injection pump turns on whenever the well pump turns on. The injection rate of the chlorine injection pump is adjusted to give the proper chlorine dosage which is often 0.5 – 1.0 mg/L of free chlorine residual as measured in the treated water with a DPD reagent field test kit. NSF 60 certified sodium hypochlorite is injected without dilution. A raw water sample tap is needed before the chlorine injection point. Plan review and approval must be completed prior to the installation of any disinfection system.

Pellet Chlorinators are not approved for use. Pellet Chlorinators are devices that introduce chlorine into a water system by dropping calcium hypochlorite pellets directly down a well casing. These devices do not provide a consistent, effective chlorine residual because the pellets do not dissolve consistently (if at all), and the feeding of pellets is typically not tied to the pumping of water. Pellets that “sit” in a well may also promote corrosion of well components.

Operation

The chlorine pump must be inspected frequently to ensure it is working properly. The operator must ensure there is always enough and the right concentration of chlorine solution in the container. Goggles, respirator, and an eye wash station should be available to the operator when pouring and mixing the chemicals, along with adequate ventilation of the chemical storage area. There are several factors to review when designing and operating a chlorine injection system.

Free Chlorine Residual

Chlorine is normally injected at a rate needed to produce about 0.5-1.0 mg/L of free chlorine residual in the treated water. This level of free chlorine residual ensures that all contaminants in the water are oxidized and there is enough “unused” free chlorine in the water to inactivate bacteria. Nontransient noncommunity supplies that inject chlorine for disinfection are required to maintain a chlorine residual (R325.719e(3)(a)).

Concentrations must never be higher than 4 ppm. A diethyl-p-phenylene diamine (DPD) reagent field test kit is used to measure the free chlorine residual. Chlorine residual in the distribution system must be measured on a weekly basis with continuous chlorination treatment to ensure public health safety. These measurements are recorded on the Monthly Operation Report (MOR). Compliance is based on a running annual average of all monthly averages for the last 12 months of operation.

pH

The pH determines whether the chlorine is in the form of hypochlorous acid (a powerful disinfectant) or hypochlorite ion (a much weaker disinfectant). At a pH of 7.5 equal amounts of hypochlorous acid and hypochlorite ion are present. At pH 7.0 it changes to 80% hypochlorous acid and at pH of 6.5 it is 90% hypochlorous acid and 10% hypochlorite ion.

Temperature

Warmer water increases the rate of reaction and quicker disinfection will occur.

Impurities

Chlorine is a very active chemical that reacts quickly with many substances such as organics or inorganics that can be found in water. The more impurities in the water, the less effective disinfection.

Sampling

Rule 719e of the SDWA requires NTNCWS adding chlorine or chloramines measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled. At all NCWS with chlorine injection, one of the routine total coliform samples must be obtained at the raw water sample tap when the well is running to verify the raw water is biologically safe and the chlorine injection is not masking a biological problem in the source water in Rule 732(1).

NTNCWS's must sample for DBPs when injecting chlorine.

11.4.5 Reverse Osmosis (RO)

RO is a membrane filtration process that can effectively remove a high percentage of inorganic contaminants. When used as a POU for taste issues, permitting is not required. The RO unit's wastewater discharge line shall not be directly connected to the sink drain creating a cross connection.

11.4.6 Arsenic Removal

The MCL for arsenic is 0.010 mg/L (10 ug/l or 10 ppb) and applies to NTNCWS. NCWS that exceed this standard may use arsenic treatment to meet the MCL if "an alternate source of water that meets the state drinking water standards is not available."

Best available treatment technologies for arsenic removal at small supplies include adsorption media, ion exchange, reverse osmosis, or oxidation/filtration. Arsenic removal technology may be installed at the POE to treat the entire water supply entering the building or at the POU to treat only drinking water at individual faucets. If it is a POU treatment system, any potential drinking water locations that receive untreated water must be clearly posted. The recommended language is, "Do Not Drink, Exceeds Arsenic Standard."

RO

An NSF 58 certified RO unit is recommended when using RO. Many under-the-sink POU RO units are available that treat at a rate of about 13 gallons per day and store about 2 gallons of treated water ready for consumption. The RO units provide enough drinking water for about 25 people.

Cartridge Filter

Disposable cartridge filters containing arsenic adsorption media are available. A typical 2.5" x 10" arsenic adsorption cartridge filter treats at 1 gpm and treats about 1000 gallons before needing replacement. The cartridge filters provide enough drinking water for about 50 people.

Adsorption

Arsenic adsorption media POE treatment is usually done in a pressure vessel with an automated valve unit on top. As water is filtered through the adsorption media, arsenic adsorbs to the media producing treated water low in arsenic. The media will become exhausted over time and will have to be replaced with new media when the treated water no longer meets the arsenic MCL of 0.010 mg/L. Injection of an oxidant such as chlorine will convert arsenic +3 to arsenic +5 which may help the media treat arsenic better and last longer. About once a month the

adsorption media filter will automatically backwash itself to remove particulates and fluff the media. This backwash produces a wastewater that may be high in arsenic and may need a EGLE permit to discharge to the environment or a sanitary sewer. EGLE Policy ODWMA-399-023 Disposal of Backwash Water from Arsenic Removal Units (**Appendix K13**) describes when those permits should be required.

Oxidation Filtration

Greensand iron removal is the most common of the oxidation/filtration technologies. Greensand iron removal systems for arsenic removal inject an oxidant such as chlorine or potassium permanganate to oxidize dissolved iron into a solid and then filter out the iron solids with the Greensand filter. Arsenic has a strong natural attraction to iron and will adsorb to the iron and be filtered out with the iron. This type of arsenic treatment requires a minimum level of iron in the raw water for good arsenic treatment or ferric chloride can be added before the treatment system to supply this iron. This type of treatment also backwashes itself and produces a wastewater that is high in arsenic and may need a EGLE permit.

Ion exchange

Using anion exchange resin is approved for use at NCWS but other technologies are usually better for arsenic treatment. One exception is that existing cation exchange water softeners can be approved for arsenic treatment if the treated water meets the arsenic MCL. These softeners have a very limited ability to filter out arsenic.

11.4.7 Nitrate Removal

R 325.10604c, Rule 604c discusses MCLs for inorganic chemicals including nitrates and nitrites. The best available technologies for nitrate treatment include ion exchange and reverse osmosis. Ion exchange is usually used for POE treatment and reverse osmosis is usually used for POU treatment.

Ion exchange for nitrate treatment usually uses a nitrate-selective anion exchange resin.

POU RO treatment has been allowed for NCWS with nitrate levels between 10 & 20 mg/L in Rule 604c (3).

Rule 604c (3) allows use of bottled water instead of treatment for water supplies with 10 mg/L to 20 mg/L nitrate in the raw water with certain requirements. See [section 6.10](#) for all requirements under this rule.

11.4.8 Corrosion Control for Lead & Copper

Treatment method selection shall be based on actual testing data from the supply or on treatment system performance documented from other supplies with similar characteristics and the treatment proposal must be submitted within 6 months of the monitoring period in which an AL was exceeded. The following optional corrosion control treatment methods (or combinations) must be selected: 1) alkalinity and pH adjustment; 2) calcium hardness adjustment; or 3) addition of a phosphate or silicate-based corrosion inhibitor, at a residual which is effective in reducing lead/copper levels.

Injection of phosphate or silicate into the water supply is a corrosion control method that can be used to address a lead or copper exceedance. These chemicals are safe to inject into the distribution system and coat the piping to reduce the amount of lead and copper leaching into the water supply. Chlorine must also be injected when using phosphate (Rule 604a) since phosphate is a nutrient and can cause biological growth in the distribution system. Chlorine does not have to be injected when silicates are used.

11.4.9 PFAS Removal

The best available technologies for PFAS removal include granular activated carbon (GAC) and ion exchange. The ion exchange systems use a PFAS selective resin. Both of these technologies can be used in POE applications. There are also POU devices which use activated carbon to remove PFAS.

POE GAC Systems

Granular activated carbon removes contaminants by absorption and may be installed in pressurized treatment vessels. As carbon is a food source for bacteria, the vessels may become an area of bacterial growth. Therefore, it is important to consider installing post treatment disinfection such as UV light. Chlorine injection before the GAC vessel is another disinfection method to mitigate bacterial growth. Bacteriological sampling may need to be incorporated into the treatment system's O&M routine.

POE Ion Exchange Systems

When using ion exchange a media should be selected that allows for treatment without generating a backwash stream. Single-use resin systems where the resin is changed out after exhaustion, are a good option for this.

It is important to consider what effects the treatment may have on water chemistry and corrosiveness. Some ion exchange media use a chloride-based resin which may affect the chloride content of treated water. It is good practice to measure water quality parameters both before and after treatment to determine what changes in chemistry may be occurring.

POU GAC Systems

Cartridge filters using GAC are an option for POU PFAS treatment. As with all cartridge based systems, it is important to match a supply's water quantity needs with the flow capacity of the treatment device. The NSF test protocol P473 is a means to certify the efficacy of POU PFAS treatment systems. Product's certified to have passed the tests of P473 have been shown to reduce levels of PFOA and PFOS to a combined maximum total concentration of 70ppt.

11.5 Complete Treatment

Complete Treatment means a system of filtration and disinfection required to treat either a surface water source or a source classified as groundwater under the direct influence of surface water. These are referred to as subpart H sources. Groundwater under the direct influence of surface water in Michigan is most commonly a result of Karst geology which is characterized by fractured bedrock at the ground surface that allows untreated surface water to follow channels in the bedrock down into the aquifer and into a well without natural filtration or disinfection.

Rule 611(1) states a NCWS, "shall demonstrate a safe microbiological water quality history...or the supplier shall provide complete treatment." Surface water sources are classified as Subpart H and require complete treatment. Karst sources and possibly others such as unprotected shallow gravel / cobble sources are classified as subpart H in accordance with the definition in Rules 105(i) and 611(1) and require complete treatment. The water supply is required to use a source that meets the requirements of the SDWA, where available. The use of subpart H sources for NCWS should be considered a last resort because of the treatment costs and difficulty and public health implications of failure. There are currently 12 subpart H NCWS in Michigan.

Complete treatment systems are complex, expensive, and take considerable operator oversight, monitoring, and reporting. They typically require multiple treatment steps, atmospheric storage, and repumping of treated water into the distribution system. The turbidity of treated water must be measured at least daily to confirm filtration effectiveness. Chlorine levels in treated water must be measured at least daily to confirm adequate disinfection. EGLE policy ODWMA 399-018 Turbidity Requirements and Compliance Determination (**Appendix K14**) should be consulted. A F-5 operator, compliance agreement, and contingency plan are all required. Filter integrity testing, disinfection byproduct sampling, redundancy of equipment, and other requirements may also apply.

LHDs must consult with EGLE whenever a NCWS uses or proposes to use a subpart H source. Permits for complete treatment systems shall be approved by EGLE and LHD prior to issuance due to the complexity and the significant potential to adversely affect public health if they are not designed, installed, and operated properly. EGLE will provide training and assistance for LHDs oversight of complete treatment systems that are installed.

More detailed information on complete treatment systems can also be found in the "[Michigan Noncommunity Program Level 5 Drinking Water Operator Guide](#)".

Chapter 12

Licensing of Water Haulers

In some areas of Michigan, water of good quality and adequate quantity is not available, and treatment may not be practical (depending on concentration of parameter) or be too costly. As a result, many individuals must have water that is used for drinking or household purposes hauled to their homes or businesses. Certain precautions are important to ensure that the water hauled is from a safe source and is not contaminated during its transportation and delivery. Section 18 (§325.1018) of the SDWA states that water haulers shall obtain an annual license from the department for their containers, equipment, and operation. The source of water shall be acceptable to the department and the water quality shall meet the state drinking water standards. To ensure a safe supply of water to homes and establishments requiring hauled water, standards for licensing water hauler containers, equipment, and businesses are necessary.

The SDWA, Parts 24 and 25, require EGLE issue certificates of registration annually for all water hauling equipment and containers that are used by persons who engage in the business of hauling bulk water for drinking or household purposes. Certification is not needed for hauling water for personal household or nonpotable uses.

The decision to approve the water hauler may include input from the LHD.

Part 24 of the SDWA rules prescribes standards for tanks and equipment used by water haulers to transport drinking water and serves as criteria by which a water hauler may obtain a license for a water transportation tank.

Part 25 of the SDWA rules implements section 18 of the SDWA by specifying certain criteria and requirements for licensing of water haulers and for their containers, equipment, and operation.

Before a water hauler can be issued a license, the department must initiate an investigation to determine that the water hauler has the qualifications and equipment to perform water hauling services consistent with the rules. This includes; (1) an evaluation of the water hauling transportation tanks and equipment; (2) approval of the water source facilities; (3) determination that the water hauler has knowledge of the use of chlorine for disinfection of water, and; (4) an investigation of other items necessary for proper operation of a water hauling business.

Compliance with this rule may be waived in emergency situations. In these situations, the water hauling operation must be short term (less than a month). For emergencies lasting longer, licensed businesses and equipment should be used. All containers or tanks used in emergency water hauling must be capable of delivering a safe, pure water supply. Providing hauled water during emergency circumstances requires notification to EGLE.

The current [list of licensed water haulers](#) is available on EGLE website.

12.0 Application for License

Applications for obtaining licenses for water hauling businesses and for water transportation tanks are available from EGLE. An “Original Application for License” is to be completed and submitted when the water hauling business and transportation tanks are initially licensed. After the first license, a “Renewal Application for License” must be completed on an annual basis.

12.1 Source

Sources used for hauled water will either be classified as a CWS or NTNCWS.

All water hauled by a water hauler shall be adequately disinfected when receiving water and upon delivery of water. A water hauler must add chlorine if a chlorine residual is not present unless the water is delivered to a water bottling facility and disinfected prior to use by the public. The amount of chlorine to be added in each instance shall be specified on the license issued by EGLE for the water transportation tank. At the point of delivery of the water, a free chlorine residual of 1.0 mg/L is required. In most cases, chlorine will not have to be added upon delivery.

A table matching tank size to chlorine needed to obtain proper chlorine residual is included in the guidelines. Specifics on obtaining proper chlorine residual will be provided at time of licensing and renewal.

12.2 Trip Records

A water hauler licensed by the department shall maintain trip records of all water hauled for at least two years. Trip records forms are available at no cost from the department. Some business may be exempt from record keeping.

12.3 Denial of License

If the department finds that the water hauling equipment is not in compliance with Part 24 of the rules, the department will not issue or renew the license for the water transportation tank.

The water hauler may request a contested case hearing before the department if a license is denied. A petition must be filed with EGLE pursuant to *R.325.10204* of the Michigan Administrative Code. The Director of EGLE issues the final decision.

Chapter 13

Water Bottling

The SDWA requires a person providing bottled drinking water utilize a source approved by EGLE. Bottled water source approval process pertains to those sources within Michigan. Sources used for bottling are either classified as CWS for those that use a municipal source or NTNCWS for those using a source (well) that is not part of a CWS. A proposed or existing NTNCWS well, and distribution piping and appurtenances, will be reviewed and inspected by EGLE and must comply with construction, location, and water quality requirements prior to source approval.

Michigan's regulatory authority for the enforcement of the bottled water program lies with two agencies, the Drinking Water and Environmental Health Section in the ODWMA of EGLE, and the Food and Dairy Division of the Michigan Department of Agriculture and Rural Development (MDARD). Section 325.1017 of the SDWA, and Part 26 of the rules contain the regulations for the bottled water program which are administered by EGLE.

The MDARD's Food and Dairy Division requires registration of all bottled water sold in Michigan and inspects the bottling plants, issues bottling plant licenses, enforces the labeling requirements and conducts product sampling. MDARD uses its registration requirement to advise applicant of the requirements for EGLE source approval of instate or out of state bottled water sources.

13.0 CWS Source Water

When using a CWS source for the bottled water, the applicant shall submit a written request for the approval of the source of water. The request will include the full address from where the water source will be drawn and documentation to support the water system is connected to a municipal water supply (i.e., water bill or tap in fee) indicating the name of the CWS being used.

EGLE will review the documentation and make further contacts as needed. Source approval will then be forwarded to the applicant and to MDARD. Applicants should contact MDARD regarding the physical bottled water operation.

Bottled water source approval is conducted by EGLE staff when the source water is to come from an existing approved CWS (or NCWS, see below).

13.1 NCWS Source Water

When using a well for the source of water, the applicant shall submit a written request for the approval of the source of water. The request will include the full address from where the water source will be drawn indicating the name of the NCWS being used. Some proposals involve using an existing well for bottling water while others apply to construct a new well. The well source existing or new is classified as a NTNCWS by virtue of its use for bottling drinking water.

The application shall include a site map with the location of the proposed or existing well(s), and sources of potential contamination (septic tank/drain field, feed lots, pesticide and or chemical mixing/storage/application, municipal sewer lines, storm drains, buried and above ground fuel tanks, etc.).

A sanitary survey will be completed by EGLE or the LHD. The sanitary survey will determine whether compliance with the SDWA is being met. Existing deficiencies shall be corrected prior to the granting of source approval.

New Well

If a new well is proposed to be drilled, the review of the application, site visit, issuance of a permit to construct the well and final approval to operate will be done by EGLE and LHD staff.

Source water analyses will be submitted prior to source water approval and shall meet all the NTNCWS requirements.

Water Withdrawal Tool

Requirements for water withdrawal and related environmental aspects for bottled water sources in Part 327 of the Natural Resources and Environmental Protection Act (NREPA) and the SDWA, necessitate EGLE and LHDs work closely on all applications to ensure procedures are followed prior to issuance of a construction permit or source approval.

A new or increased large quantity withdrawal (NILQW) is prohibited from causing an ARI to streams or lakes. A pump capacity of 70 gpm or more is considered a NILQW. Prior to installing a NILQW, the applicant is required to determine the potential impact on nearby water resources by using the water withdrawal assessment tool. A permit for a NILQW should not be issued without reviewing the assessment results. The assessment tool is available at egle.state.mi.us/wwat. An aquifer test is also required for an NILQW.

Existing Water Well

A well log and or the well driller's notes for the existing well must be submitted for an existing well to determine if it meets Part 127 construction standards. Wells that do not meet Part 127 should not be approved for a bottled water source.

Treatment

If the source requires treatment to meet a public health standard (e.g., arsenic) that treatment is included as part of the source water approval process. A permit to install treatment and the appropriate operator classification is required.

Treatment installed as part of the bottling process is regulated by MDARD and may not be subject to requirements of the SDWA. In these situations, EGLE will recommend that the supply have an appropriately designated operator to match the complexity of the treatment.

Hauled Water

All water hauled in Michigan must meet the SDWA rules as stated in Part 24 and 25 of the SDWA. When hauled water will be delivered to a water bottling operation, the source of the water must be from an approved CWS or NTNC source.

The hauled water operation will meet the requirements as specified in [Chapter 12](#) of this manual. However, water haulers may not be required to maintain a disinfectant residual when hauling from the approved source to a bottling plant that uses approved disinfection methods in the bottling operation to maintain sanitary quality of the final product.

13.2 Source Approval

Upon completion of the review of either an existing or proposed source, EGLE will forward an "approved" or "not approved" letter to the LHD, the applicant, and MDARD.

13.3 Sanitary Surveys

The sanitary survey evaluation extends to the POE of the distribution system. Water downstream of the POE is considered the bottling and packaging operation. This includes treatment and/or additives used in those processes. In these situations, the treatment and or additives would fall under the authority of either MDARD or the FDA.

Bottling and Packaging Operations with 25 or More Employees.

If a bottled water source is connected to a bottling and packing operation that does employ 25 or more persons for 6 months or more per year, the water system distribution system, (e.g., drinking fountains, bathrooms, break rooms, etc.), is sampled according to the SDWA and included in a sanitary survey like any other nontransient workplace. The bottling and packaging lines and any treatment units on them remain under the authority and oversight of the MDARD in accordance with the SDWA.

13.4 Sampling

All sampling required in the SDWA is to be done at the raw water tap for untreated sources. If the NCWS installed treatment to meet a standard, sampling is required after treatment at the POE to the distribution system.

Sampling conducted in the plant distribution system or bottling and packaging operation is under the authority of the MDARD.

Chapter 3 Appendices

Classification, Inventory and Annual Fees

Documents	Number of Pages
C01 Public Water Supply Definitions	2
C02 Classification Change Form	2
C02.1 Classification Change Approved Letter	1
C03 Classification of Public Water Supplies Policy ODWMA-399-013.....	12
C03.1 Request for Water Supply Classification Review.....	4
C04 New Noncommunity System Letter	2
C05 New Systems Capacity Assessment for Nontransient Noncommunity Public Water System Policy ODWMA-399-014	7
C06 Noncommunity Water Supply Owner's Guide	3

Public Water Supply Definitions

Michigan's Safe Drinking Water Act

1976 PA 399

A "public water supply" means a waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water, except those systems that supply water to only one living unit. Public water supplies are classified into three types.

Type I

A community water supply provides year-round service to not less than 15 living units or serving not less than 25 residents.

- Permits are required from the Michigan Department of Environment, Great Lakes, and Energy (EGLE).
- Engineering plans are required.
- Examples-municipal water supplies, condominiums, apartment complexes, and subdivision water supplies.

Type II

A noncommunity water supply which has not less than 15 service connections or which serves not less than 25 individuals on an average daily basis not less than 60 days out of the year.

- Permits are required and are issued by EGLE or an EGLE designated local health department.
- Construction details and sketch of well site are required.
- Examples-schools, restaurants, industries, campgrounds, parks, motels.
- See back of this sheet for a breakdown of the different Type II water supplies.

Type III

All public water supplies which are not Type I or Type II public water supplies.

- No statewide permit required.
- Local health departments require permits under local ordinances.
- Examples-small apartment complex, small grocery store, small retail store.

A living unit is a house, apartment, or other domicile occupied or intended to be occupied on a day-to-day basis by an individual, family group, or equivalent.

A service connection is a direct connection from a distribution water main to a living unit or other facility for the purposes of providing water for drinking or household purposes.

Type II

A noncommunity water supply which has not less than 15 service connections or which serves not less than 25 individuals on an average daily basis not less than 60 days out of the year.

- Permits are required and are issued by EGLE or an EGLE designated local health department.
- Construction details and sketch of well site are required.
- Examples-schools, restaurants, industries, campgrounds, parks, motels.

Customer Type

Type II Nontransient

A Type II water supply that routinely serves the same 25 or more individuals on a daily basis at least 6 months per year.

Examples-schools, daycare centers, factories, offices and other work sites

Average Daily Water Production

Type IIa

Type II supplies with an average daily water production for the maximum month equal to or greater than 20,000 gallons per day.

Type IIb

Type II supplies with an average daily water production for the maximum month of less than 20,000 gallons per day.

Type II Transient

Any Type II (noncommunity) water supply that does not meet the definition for a type II nontransient water supply.

Examples include motels and restaurants with less than 25 employees, medical offices, parks, campgrounds, churches, and marinas.

Average Daily Water Production

Type IIa

Type II supplies with an average daily water production for the maximum month equal to or greater than 20,000 gallons per day.

Type IIb

Type II supplies with an average daily water production for the maximum month of less than 20,000 gallons per day.

Owner/Operator Certification
Noncommunity Public Water Supply Classification Change

A classification change of the public water supply named below is hereby requested based on the facility usage and criteria documented herein and the applicable definition under the Safe Drinking Water Act, 1976 PA 399, and Administrative Rules (see next page).

Facility Name _____

WSSN _____

Use of Facility _____

Facility Operation Period _____

Average number of persons (transient) using facility during peak 60-day period _____

Number of regular consumers/same individuals (nontransient) using facility 6 months or more per year _____

Number of residents served by water system _____

Source of usage and operational data _____

PUBLIC WATER SUPPLY CLASSIFICATION CHANGE REQUEST
(Check appropriate classification for each column)

☐ Transient Noncommunity

☐ Nontransient Noncommunity

TO

☐ Transient Noncommunity

☐ Nontransient Noncommunity

☐ Type III Public Water Supply

☐ Private Water Supply

☐ Well Abandoned

OWNER/OPERATOR'S STATEMENT OF STATUS

I hereby certify the above information is true and accurate to the best of my knowledge. If in the future, this water system meets the criteria to be classified as a Noncommunity water supply, I will notify the local health department. At that time, a sanitary survey will be scheduled, water samples will be required, and the annual fee and a new water sampling schedule will be assigned.

Owner/Official Signature: _____

Printed Name: _____

Title: _____ Date: _____

Health Department Representative Signature: _____

Date: _____

Noncommunity Public Water Supply System Classification Change Instructions and Definitions

Public Water Supply - means a waterworks system which provides water for drinking or household purposes to persons other than the supplier of water.

Community Supply - means a public water supply that provides year-round service to not less than 15 living units or which regularly provides year-round service to not less than 25 residents.

Noncommunity Supply - means a public water system, which is not a community supply, but which has not less than 15 service connections or which serves more than 24 persons per day on an average daily basis for not less than 60 days per year. *Examples* - restaurants, bar, motel, resort, campground, church, school, roadside park, convenience store, service station, industry.

Inactive supply - temporarily/permanently closed, well converted to individual residence use

Service Connection - a direct connection from a distribution watermain to a building for the purpose of providing water for drinking or household purposes.

Living unit - a house, apartment, or other domicile occupied or intended to be occupied on a day-to-day basis by an individual family group, or equivalent.

Maximum facility capacity - the number of seats, bed spaces, fire marshal building capacity or other applicable unit of measurement.

Transient - a person who can consume water from a water system. Examples include people stopping by at a highway rest stop, people staying at a hotel or resort, people having a meal at a restaurant.

Nontransient - a person who has a regular opportunity to consume water produced by the system. Examples include children at school and employees at their workplace.

Resident - an individual who owns or occupies a living unit.

Source of data - payroll records, enrollment seating capacity, bedspaces, rental records, receipts, actual count, estimates, etc.

Average number persons served per day – from records, determine the number of persons served each day during the 60 busiest days of the year. The 60 days do not need to be consecutive. Add the attendance figures and divide by 60. This result is the average number of persons served per day. Records must be made available to the Department upon request.

Serve or provide - the availability or opportunity for consumption of water as opposed to a direct physical offering or consumption.

Type III Public Water Supply - public water systems that do not meet the community or noncommunity definition.

Private Water Supply - water system that serves one single-family residence.

Authority – *Safer Drinking Water Act, 1976 PA 399, and Administrative Rules. A person who violates this Act or the rules promulgated hereunder, or an order issued pursuant to this Act is guilty of a misdemeanor and shall be punishable by a fine of not more than \$5,000.00 for each day of violation, or by imprisonment for not more than 1 year or both.*

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Classification Change for water system
WSSN

Dear :

A classification change form was received by this office on date. We have reviewed the information and approve the change from a nontransient noncommunity system to a transient noncommunity system. Due to the change in classification the monitoring requirements will change. Please find a new monitoring schedule below.

Monitoring (Sampling) Requirements

Unless you are required to sample more frequently as a condition of a license or policy, your system must meet the following sampling schedule.

Coliform (bacteriologic)	Frequency:	
	Next sample due:	
	Sampling location:	DS01 -

Nitrate (inorganic))	Frequency:	
	Next sample due:	
	Sampling location:	Entry Point 1

Sampling Procedures

The Water Supply Serial Number (WSSN) and Water System Facility (WSF) ID assigned to this water system are: WSSN and WSF ID . These unique identifiers must be recorded on each water sample form and any correspondence. Failure to use the WSSN and WSF on sample forms may result in a monitoring violation.

Michigan's Safe Drinking Water Act (Act 399 of the Public Acts of 1976) and Administrative Rules specifies that it is the owner/operator's responsibility to collect and submit the required water samples for analysis and to maintain and operate the water system in a sanitary condition. Water sample results can be emailed to .

If you have questions regarding the monitoring requirements, please contact this office.



DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION POLICY AND PROCEDURE

DWEHD-399-013 – Classification of Public Water Supplies

Effective Date: October 12, 2007
Last Revision Date: April 28, 2022
Distribution: External

ISSUE

Drinking water supplies are classified based on multiple factors including the population served, the type of service, frequency of service, and ownership and operation.

This policy is established to provide the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) Drinking Water and Environmental Health Division (DWEHD) and local health department (LHD) staff with an approach to accurately determine the classification of waterworks systems. Proper classification has significant design and operational implications and is critical for the protection of public health.

STAKEHOLDER INVOLVEMENT

Stakeholders were engaged throughout the revision process. The current stakeholder group includes representatives from the Michigan Departments of Agriculture and Rural Development, Health and Human Services, and Licensing and Regulatory Affairs and LHDs.

AUTHORITY

The Michigan Safe Drinking Water Act, 1976 PA 399, as amended, being MCL 325.1001 *et seq.* (Act 399), and the administrative rules promulgated thereunder, being R 325.10101 *et seq.* (Act 399 Rules), establish the classification of public water supplies (see Part 5 of the Act 399 Rules). EGLE has regulatory authority over public water supplies. It oversees Type I supplies directly and delegates authority over the Type II and Type III supplies to LHDs under Part 16 of the Act 399 Rules.

DEFINITIONS

Drinking Water Supply Classification Review Team (Review Team) – A team consisting of the EGLE, DWEHD's Field Operations Section manager, the Environmental Health Section manager, the Source Water Unit supervisor, the Noncommunity Water Supply Unit supervisor, the Community Water Supply (CWS) Capacity Development staff member, and an enforcement analyst or specialist. The Review Team shall convene to review and make determinations on site specific classification cases. This Review Team will invite and include the CWS district supervisor, other EGLE staff with expertise related to the relevant factors, and two representatives of the LHD in the geographical area of the water supply.

Full Capacity – For purposes of classification, full capacity of licensed facilities, such as agricultural labor camps or childcare centers, is the maximum number of individuals that may occupy the facility. For

DWEHD-399-013 – Classification of Public Water Supplies

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purposes of classification, full capacity is the number of permanent beds available for the people housed in a facility, such as students in a dormitory, prisoners in a penal institution, residents in a nursing home or foster care home, patients in a psychiatric institution, etc. This number does not include temporary beds, such as cots, daybeds, or roll-away beds that are used in times of overcrowding or for short-term visitors who are staying overnight with a resident.

Living Unit – Per Act 399, a house, apartment, or domicile occupied or intended to be occupied on a day-to-day basis by an individual, family group, or equivalent. MCL 325.1002(j).

Person – Per Act 399, an individual, partnership, copartnership, cooperative, firm, company, public or private association or corporation, political subdivision, agency of the state, agency of the federal government, trust, estate, joint structure company, or any other legal entity, or their legal representative, agent, or assigns. MCL 325.1002(m).

Public Water Supply – Per Act 399, a waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water, and does not include either of the following:

- i. A waterworks system that supplies water to only one living unit.
- ii. A waterworks system that consists solely of customer site piping. MCL 325.1002(p).

Resident – Per the administrative rules, a resident is an individual who owns or occupies a living unit. Michigan Administrative Code, R 325.10107(v).

Type I Public Water Supply – A Type I public water supply provides year-round service to no fewer than 15 living units or regularly provides year-round service to no fewer than 25 residents. Type I public water supplies are also called CWSs and may be either publicly or privately owned.

Type II Public Water Supply – A Type II public water supply provides service on an average daily basis to 25 or more individuals or 15 or more service connections for no less than 60 days per year but does not meet Type I criteria. Type II public water supplies are also classified according to their average water production during the month of maximum water use. A Type IIa supply produces 20,000 or more gallons per day (gpd), and a Type IIb supply produces less than 20,000 gpd. Type II public water supplies are called noncommunity supplies and are not intended to serve year-round living units.

Type III Public Water Supply – Type III public water supplies are public water supplies that are not Type I or Type II supplies. Type III public water supplies may or may not serve year-round living units. While this definition and classification is not recognized in the federal Safe Drinking Water Act, Michigan administrative rules applicable to Type III supplies are found in Part 5, Part 7, and Part 8 of the Supplying Water to the Public Rules, Michigan Administrative Code, R 325.10101 *et seq.*

A breakdown of the classification of public drinking water supplies is summarized in the table below:

Types of Public Drinking Water Supplies

Classification		Description	Examples
Public Water Supplies**	Type I Community	Provides year-round service to ≥15 living units OR to ≥25 residents	Municipalities, subdivisions, apartments, condominiums, nursing homes, manufactured housing communities
	Type II * Noncommunity	Nontransient Serves ≥25 of the SAME individuals on an average daily basis for ≥six months per year. (and is not a Type I)	Places of employment, schools, day care centers, bottled water sources
		Transient Serves ≥25 individuals or ≥15 service connections on an average daily basis for ≥60 days per year. (and is not a Type I)	Hotels, restaurants, campgrounds, churches, highway rest stops
	Type III	Public water supply that is not a Type I or Type II	Subdivisions, apartments, condominiums, or duplexes with fewer than 25 residents and fewer than 15 living units; Very small business with <25 employees and customers or open <60 days per year

* Type II public water supplies are further classified according to their average water production during the month of maximum water use. A Type IIa supply produces 20,000 or more gpd and a Type IIb supply produces less than 20,000 gpd.

** Ownership or operation of multiple waterworks systems in the same general location is critical to determining classification. See Rule 503 of the Act 399 Rules and additional information in this Policy and Procedure.

Year-round Service – Per Act 399, the ability of a supplier of water to provide drinking water on a continuous basis to a living unit or facility. MCL 325.1002(y).

POLICY

Classifying Public Water Supplies

Owners/developers/proprietors/suppliers must submit the necessary plans and documentation for review to either the LHD or EGLE. The LHDs or EGLE will then determine the classification of the supply. Although EGLE and the LHDs work together to classify supplies, EGLE retains authority over Type I water supplies and, therefore, has the authority to classify a water supply as Type I.

The classification methods described here to estimate population may differ from methods utilized for wastewater systems classification and design. The classification methods described here to estimate population may differ from the methods utilized to determine drinking water monitoring schedules.

Type I: Public water supplies that provide year-round service to 15 or more living units shall be classified as Type I public water supplies, regardless of the number of individuals present. Public water supplies that provide year-round service to 25 or more residents shall be classified as Type I public water supplies.

Estimating Population of a Type I Public Water Supply: For the purpose of determining/estimating population when there are less than 15 living units, EGLE or the LHD will use nine living units as a trigger for a review by the Review Team to determine if the supply is a Type I public water supply. The trigger point is based on Michigan's county level census data from 2017 that ranges from 2.03-2.71 persons per living unit. The census data may be used to help the Review Team determine the classification; however, additional data and relevant factors will also inform the decision.

Facilities that are licensed, regulated, or otherwise categorized based on the number of beds at full capacity shall be classified based on their full capacity regardless of the number of beds occupied on any given day, plus the number of workers and their family residing there. These facilities include but are not limited to nursing homes, homes for the aged or indigent, adult foster care homes, year-round agricultural labor camps, dormitories, penal institutions, and psychiatric institutions.

Type II: Public water supplies that are not a Type I public water supply but serve 25 or more people or 15 or more service connections for at least 60 days per year, shall be classified as a Type II public water supply. Examples include but are not limited to schools, daycare centers, campgrounds, restaurants, seasonal resorts, hotels, churches, and licensed facilities with fewer than 25 permanent beds but the sum of residents, employees, and visitors is 25 or greater.

Type II public water supplies are also classified according to their average water production during the month of maximum water use (Type IIa and Type IIb).

Determining Type II Transient Supplies: The key consideration for transient type supplies should be the availability or opportunity to consume water. Individuals that only have access to water in a restroom setting are not intended to be included as persons served in the definition of Type II public water supply. If a transient facility does not have a public drinking fountain, post mix pop, juices, soups, or coffee vending, the patrons should not be counted as consumers.

The same principle applies to small transient facilities with a food license. If the facility has no offering or availability of drinking water to customers, they should be classified as a Type III public water supply. Water that comes in contact with food or food preparation surfaces must be from an approved source, but that does not necessarily classify the facility as a Type II public water supply.

Determining Type II Nontransient Supplies: For purposes of classification as nontransient noncommunity public water supplies, a person shall be counted as a nontransient person if they are present an average of four hours per day for four days per week. Employees and other individuals not meeting these criteria shall be counted as part of the transient population.

Type III: Public water supplies that are not Type I or Type II public water supplies are classified as Type III. These supplies include but are not limited to a duplex, apartments, manufactured housing community serving less than 25 residents and less than 15 service connections, facilities serving less than 25 individuals or open less than 60 days, and adult foster care homes with a combined total number of licensed beds, employees, and visitors of fewer than 25 individuals.

Determining Type III: If the public water supply serves living units, follow the procedure section below to determine if the Review Team should be consulted. Review the waterworks system compared to the Type I definitions regarding service connections, population served, and ability to provide year-round service. Also, evaluate if the ownership or operation of the waterworks system is shared with any other waterworks systems in the same general location.

If the supply is not a Type I, then consider if it should be a Type II. Review the waterworks system compared to the Type II transient and nontransient definitions, ownership and operation, and specific situations. If the public supply is not determined to be a Type I or Type II supply, it is a Type III supply.

SPECIFIC SITUATIONS

Rule 503: According to R 325.10503 of the Act 399 Rules, two or more waterworks systems owned or operated by the same person at the same general location not individually meeting the definition of a community supply or a noncommunity supply, but collectively meeting the definition of a community supply or a noncommunity supply, shall be considered by the department to be a single public water supply for classification purposes. Also, a waterworks system meeting the definition of a community or noncommunity water supply and a waterworks system not meeting the definition of a community or noncommunity water supply in the same general location collectively owned or operated by the same person may be considered by the department to be a single public water supply. If each waterworks system only supplies water to one living unit, Rule 503 may not apply. See MCL 325.1002(p).

When evaluating related systems under Rule 503, consult the Review Team.

Notice of Proposed Action (for Condominium Project): Under the authority of the Michigan Condominium Act, 1978 PA 59, as amended (Act 59), Section 71, a written notice of the proposed action shall be provided to EGLE. This notice may be provided using EGLE form EQP5870. For projects not serviceable by public water and public sewers, Section 71a adopts the rules for subdivisions in regard to the water supply and wastewater system proposed for the development.

Bottled Water and Hauled Water Sources: Sources for water bottling operations and hauled water operations that are not community supplies are classified as Type II public water supplies and shall be considered nontransient.

Living Units (Seasonal versus Year-Round): Vacant or unoccupied living units will be counted in the number of year-round living units for determining classification of the water supply if water service is maintained for possible, intermittent, or immediate occupancy. Living units to which water service must be shut off and the service line drained and left untenanted may not be counted as available year-round for the classification of a Type I public water supply. An example of this scenario would be if portions of the system are drained for winter months to prevent freezing, the living units are not occupied, and the supply adheres to the requirements of Michigan Administrative Code, R 325.11110.

Agricultural Labor Camps: In Michigan, agricultural labor camps (also referred to as migrant labor housing) are licensed under the authority of Part 124, Agricultural Labor Camps, of the Michigan Public Health Code, 1978 PA 368, as amended, which requires a water supply meet the requirements of Act 399. Agricultural labor camps may be seasonal or year-round. The number of living units and capacities are site and licensing specific; therefore, migrant housing facilities that are not a customer of an approved Type I supply could fall under a classification as a Type I, II, or III supply.

Seasonal versus Year-Round Noncommunity Water Supplies: Under the 2016 revised total coliform rule, seasonal noncommunity supplies must be identified. A seasonal noncommunity supply is one that is not operated on a year-round basis and starts up and shuts down at the beginning and end of each operating season. Examples of a seasonal noncommunity supply include but are not limited to campgrounds, golf courses, ice cream parlors, parks, beaches, and marinas. "Serving the public" means

In an effort to provide direction on determining if a noncommunity water supply should be classified as a seasonal supply, the Seasonal Supply Determination Chart for Noncommunity Public Water Supplies is located at [Seasonal Supply Determination Chart \(michigan.gov\)](#). If a facility has multiple sources with individual Water Supply Serial Numbers (WSSN), determination of seasonal or year-round status is made per WSSN. The LHD should consult with EGLE on those supplies where the classification is difficult to determine.

Condominiums: Condominium projects can take on a variety of forms. The commonality between them all is that they have bylaws and master deeds which govern operation and shared ownership. Historically, bylaws and/or master deeds containing occupancy restrictions (i.e., restricting residents' occupancy to no more than six months per year) were considered as mechanisms to yield a designation as a Type II or Type III water supply versus a Type I water supply. These bylaws, master deeds, and other documents, including those related to the rental of units or terms of occupancy, can be amended, or otherwise changed by the condominium project developer, by co-owner vote, and/or by association boards without notification to EGLE or any other regulatory agency and are, therefore, not an acceptable method of restricting population served.

Every attempt should be made during initial contact with owners/developers/proprietors/suppliers to determine the intent and scope of the water service and the ultimate build-out capacity. In doing so, the initial water system construction can be made to accommodate future changes in system capacity and reclassification when future phases are constructed. The technical, managerial, and financial (TMF) capacity requirements vary significantly based on classification and it can be very difficult to achieve compliance after initial water system installation.

If EGLE is notified of an existing unregulated or potentially misclassified water supply providing year-round service to 15 or more living units and/or regularly provides year-round service to 25 or more residents, EGLE staff will confirm the population and classify the supply as a Type I water supply as necessary. As part of the reclassification process, communication between the LHD, EGLE, the supplier, and other state licensing agencies (if applicable) shall occur. If the supply does not meet Type I minimum standards at the time it is classified by EGLE as a Type I public water supply, EGLE shall consider the public water supply a “new” supply for the purpose of capacity development and shall ensure the public water supply has the TMF capacity to operate as a Type I CWS, including the possibility of having to

install wells that comply with Type I construction, isolation, and water quality standards. This may be initiated by EGLE and the water supplier entering into an administrative consent order (ACO) with reasonable time frames for system upgrades with safeguards in place to protect public health.

If EGLE or the LHD is notified that an existing unregulated or Type III supply provides service on an average daily basis to 25 or more individuals, or 15 or more service connections for no less than 60 days per year, but does not meet Type I criteria, LHD staff will confirm the population and reclassify the supply as a Type II water supply as necessary. As part of the reclassification process, communication among the LHD, EGLE, the supplier, and other state licensing agencies (if applicable) shall occur. If the supply does not meet Type II minimum standards at the time it is classified as a Type II public water supply, the LHD shall consider the public water supply a "new" supply for the purpose of capacity development and shall ensure the public water supply has the necessary TMF capacity to operate as a Type II public water supply. This includes assessing the water quality and eight minimum elements included in a sanitary survey and may include the possibility of having to install wells and/or upgrade existing noncompliant wells.

This may be initiated by the LHD and the water supply entering into an ACO, or similar enforceable agreement, with reasonable time frames for system upgrades with safeguards in place to protect public health. The LHDs should refer to EGLE's Capacity Development Strategy for Public Water Supplies for additional information regarding capacity development and new supply onboarding.

If EGLE is notified of an unregulated secondary treatment system, EGLE will follow the steps in the DWEHD-399-031 Policy on Secondary Treatment.

Any reclassification of a public water supply shall be made in writing to the owner, with copies of this notice provided to the appropriate regulatory agency if the oversight responsibility is also changing.

Drinking Water Supply Classification Review Team

Any reviews to determine the classification of a water supply will be conducted by the Review Team.

This Review Team will perform timely site-specific reviews of:

- proposed new developments with 9-14 living units.
- Proposed new developments where multiple Type III or a combination of Type III and private wells are proposed to serve nine or more living units.
- Situations where questions regarding same general location, or similar ownership or operation, are occurring.
- Other unique situations that arise within EGLE or where the LHD requests review/assistance such as, but not limited to Act 59 Developments including Site Condominiums, or Conversion Condominiums.
- Existing water supplies where a new classification of Type I is being debated.

Guidance on making classification decisions is available for the Review Team in a separate document.

PROCEDURE**Determining Classification of New Water Supplies**

Step	Who	Does What
1	EGLE staff for Type I or LHD personnel for all other classifications	Receives and reviews documentation from owner/developer/proprietor/supplier. This documentation may be provided to EGLE or LHDs through new land development inquiries, plan unit developments, Notice of Proposed Action (for Condominium Project), Conversion Condominiums, or permit applications. Determine if additional documentation is required to make classification determination and request additional information if necessary.
2	Water Supplier	Provides EGLE or the LHD with additional documentation requested (if requested) including details on ownership and operation, number of living units served, and the full build-out capacity.
3	EGLE staff for Type I or LHD personnel for all other classifications	Make classification determination. In cases where applicability of Rule 503 is unclear or where year-round population served is between 9-14 living units, EGLE staff and/or LHD staff refer to the Review Team for classification determination.
3a	EGLE Review Team	Reviews documentation and determines classification.
4	EGLE staff for Type I or LHD personnel for all other classifications	Document the classification decision, enter data into applicable database and notify water supply of decision. Carbon copy local and state agencies who may find this information meaningful.

Determining Classification of Existing Water Supplies

Step	Who	Does What
1	EGLE staff for probable Type I or LHD personnel for all other classifications	Requests, receives, and reviews documentation from owner/developer/proprietor/supplier regarding number of service connections, number of living units, population served, and ownership and operational status. Determine if additional documentation is required to make classification determination and request additional information if necessary.
2	Water Supplier	Provides EGLE or the LHD with additional documentation, as requested.
3	EGLE staff for the Type I or LHD personnel for all other classifications	Determines if documentation and as-built conditions warrant a change in the classification of an existing waterwork(s) system. Consults with other regulatory agency(s) if a change in classification is triggered.

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Step	Who	Does What
4	DWEHD and LHD staff	Make classification change. In cases where applicability of Rule 503 is unclear or where year-round population served is between 9-14 living units, EGLE staff and/or LHD staff refer to the Review Team for classification determination.
4a	EGLE Review Team	Reviews documentation and determines classification.
5	EGLE staff for probable Type I or LHD personnel for all other classifications	Document the classification decision, enter data into applicable database, and notify water supply of decision. Carbon copy local and state agencies who may find this information meaningful.

LINK TO ADDITIONAL INFORMATION

[Michigan Safe Drinking Water Act, 1976 PA 399, as amended](#)

APPROVING AUTHORITY



Eric J. Oswald, Director
Drinking Water and Environmental Health Division



Aaron B. Keatley, Chief Deputy Director

HISTORY

Policy No.	Action	Date	Title
WB-399-013	Original	October 12, 2007	Classification of Public Water Supplies
ODWMA-399-013	Revised	April 5, 2015	Classification of Public Water Supplies
ODWMA-399-013	Revised	August 1, 2016	Classification of Public Water Supplies
DWEHD-399-013	Revised	April 28, 2022	Classification of Public Water Supplies

CONTACT/UPDATE RESPONSIBILITY

Any questions or concerns regarding this policy and procedure should be directed to Dana DeBruyn, DWEHD, at DeBruynD@Michigan.gov.

An EGLE policy and procedure cannot establish regulatory requirements for parties outside of EGLE. This document provides direction to EGLE staff regarding the implementation of rules and laws administered by EGLE. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and does not have the force and effect of law. EGLE staff shall follow the directions contained in this document.



REQUEST FOR WATER SUPPLY CLASSIFICATION REVIEW

This form is to be completed, and all pages submitted by Local Health Department staff or EGLE staff. It is to be used to request a review and classification determination of a new or existing water supply. The developer, association, supplier, and/or consultant is to provide current copies of this information to the Local Health Department and/or EGLE, as requested.

Complete all below fields, as applicable.

SECTION A – Date and Form Completed by			
Date of Request:			
Form Completed by:		Title:	
SECTION B – Location and Staff, if known			
County Location:		CWS District Number:	
CWS Engineer:			
CWS District Supervisor:			
EGLE NCWS Analyst:		EGLE Type III Analyst:	
Any additional staff previously consulted with:			
Local Health Department Contacts (<i>provide 2</i>):		Telephone Number: ()	
		Telephone Number: ()	
If a Licensed Entity, include MDARD, LARA or DHHS Contact:			
SECTION C – If an <i>EXISTING</i> Water System			
Current Classification:			
PWSID or WSSN (<i>if applicable</i>):			
Water System Name:			
Other Name:			
Address:		Township:	
City:	Michigan	Zip Code:	
SECTION D – If a <i>PROPOSED</i> New Construction Water System			
Name of Proposal:			
Township:		Section Number:	
Address (<i>if available</i>):			
City:	Michigan	Zip Code:	

SECTION E – Reason for Engaging Review Team (*check all that apply*):

Reference Policy DWEHD-399-013 – Classification of Public Water Supplies.

Visit Michigan.gov/EGLE/-/Media/Project/Websites/EGLE/Documents/Policies-Procedures/DWEHD/399-013-Classification-of-Public-Water-Supplies.pdf.

☐	Proposed developments with 9-14 living units.	
☐	Proposed developments and future phases where multiple Type III or a combination of Type III and private wells are proposed to serve nine (9) or more living units.	
☐	Situations where questions regarding same general location, or similar ownership or operation, are occurring.	
☐	Other unique situations that arise within EGLE or where the LHD requests review/assistance such as, but not limited to Act 59 Developments including Site Condominiums, or Conversion Condominiums.	
☐	Existing water supplies and their current classification where a new classification of Type I is being proposed.	
☐	Other, please describe:	

SECTION F – Describe the *EXISTING* Water Supply

Number of Current Service Connections (SC)/Population (P): ☐ SC or ☐ P

Total Number of Existing Wells:

Current Use of Wells (*example drinking water, irrigation*):

Period of Current Service Dates: _____ thru _____

Comments:

SECTION G – Describe the *PROPOSED* Full Phase/Full Capacity Water Supply

Projected Maximum Number of Service Connections/Population:

Total Number of Proposed Wells:

Proposed Use of Well(s):

Proposed Period of Service (*example all year vs. partial year*):

Comments:

SECTION H – ATTACH the following Supplemental Documents along with this form:	
☐	Owner name and contact information, along with contact information for project.
☐	Site plans showing well(s) existing and/or proposed, aerial photos, online parcel map.
☐	Documents, including emails, regarding status of the supply or details about the proposed system, service connections, structures served.
☐	If purpose of review is to review applicability of Rule 503 of Act 399, documentation regarding ownership and/or operation of adjacent or contiguous parcels. This is typically obtained from the County Assessor's office or online parcel maps.
☐	Information regarding possible accessibility/availability to connect to an existing community water supply.
☐	Any other documents that may be relevant.

For CONDOMINIUM DEVELOPMENTS, additional documentation is requested and is dependent on the type of project:

SECTION I – If an <i>EXISTING</i> Condominium Project, also include the following:	
☐	Copies of the recorded condominium documents (Recorded Master Deed, Bylaws, Exhibits, Condominium Subdivision Plan, and any amendments).
☐	When amendments are proposed, include description and/or site plan.
☐	Site plan showing existing well(s) and respective service connection(s), unless clearly shown on the recorded Utility Plan Exhibit and/or condominium subdivision plan.
☐	Copy of the site report.
☐	Copy of the LHD preliminary approval and/or final approval letter(s) for review of the condominium project.

SECTION J – If a <i>PROPOSED NEW</i> Condominium Project, also include:	
☐	Proposed building(s) use (residential and/or non-residential).
☐	A proposed site plan identifying the unit boundaries.
☐	Location and description of proposed common elements (general and limited).
☐	Proposed ownership/maintenance of any water supply related features.
☐	Identification of whether the project will be expandable and/or phased development.
☐	Proposal for granting the express permission to subdivide any unit in condo documents.

SECTION K – If a <i>PROPOSED CONVERSION</i> Condominium Project, also include:	
☐	Existing and proposed building(s) use (residential and/or non-residential).
☐	A proposed site plan identifying the: • Unit boundaries • Unit number • Location and description of proposed common elements (general and limited) • Existing well(s) locations • All water service connections on the subject parcel • Any existing or proposed service connections to other parcels (and number residents or persons served)

SECTION L – Request for Classification Review Form Prepared by LHD or EGLE:

The information provided is that known and available as of the date below. It is understood that should any additional information become available, prior to the determination being made by the Classification Review Team, that it will be submitted.

Printed Name

Date

()

E-mail

Telephone Number

Local Health Department or EGLE staff to submit completed Request for Classification Review form, along with supplemental and required documents, to EGLE at the E-mail or mailing address listed below:

E-mail: EGLE-EH@Michigan.gov

Mail:

Michigan Department of Environment, Great Lakes, and Energy
Drinking Water and Environmental Health Division
Environmental Health Section
P.O. Box 30817
Lansing, Michigan 48909-8311

Return this completed form to EGLE

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

EXAMPLE LETTER

LHD: Remove or add information as needed.

SUBJECT: System Name
 Type II Public Water System Classification

It has recently been determined that business meets the criteria for classification as a Type II noncommunity water supply system and shall be regulated as such. Type II noncommunity water supply systems are regulated under the Michigan Safe Drinking Water Act, (Act 399), P.A. 1976, as amended.

Describe the water system and it's use.

Information regarding the Department of Environment, Great Lakes, and Energy (EGLE) Noncommunity Water Supply Program, such as guidance manuals, templates, permit applications, rules, and contact information, can be found by going to the EGLE website www.michigan.gov/noncommunitywatersupply. A copy of Act 399 and the related rules are available on the website under Laws and Rules.

The following items outline Rules and requirements of Act 399 with which business will need to comply.

1. On-site inspections and surveillance activities are required by Part 7, *Surveillance, Inspection, and Monitoring*. Visits and sanitary surveys are conducted periodically by LHD staff. I will contact you to set up the initial visit. You should also feel free to contact me by phone at phone, by email at email, or by mail at address. You may also fax information to fax.
2. Part 8, *Groundwater Sources*, Rule 325.10828 requires that raw water sample taps be available for each well. We recommend using a tap without hose threads and locating it a minimum of 18 inches above the floor. A permit must be obtained to make these changes if they are not already present within the existing well piping setup.
3. Part 19, *Examination and Certification of Operators*, Rule 325.11905, requires that Type II nontransient noncommunity water systems be under the supervision of a certified drinking water operator. For the purpose of determining proper oversight, each water system is classified based on the level of treatment provided, the population served, and the extent of the distribution system. business has been determined to be an S-5 system, supplying untreated groundwater to a distribution system limited in extent. business requires an operator with at least an S-5 certification. According to the EGLE policy (ODWMA-399-017), a certified operator must be on site *monthly* at an S-5 system to oversee the system. A list of certified operators in your area will be provided to you upon request.
4. Sampling for chemical analysis of noncommunity water supplies is required per Part 7, *Surveillance, Inspection and Monitoring* of Act 399. During the initial process of acceptance as a Type II water system, the existing/new well(s) will undergo complete testing by the owner/operator, including bacteriological, inorganic, volatile organics, metals, pesticides, herbicides, per- and polyfluoroalkyl (PFAS) and radiological. Thereafter, a monitoring schedule is sent to each Type II water system annually. Please note that failure to monitor by the deadlines on your schedule may result in monitoring violations, public notice requirements, and fines.
5. Frequency sampling for bacteriological analysis is required by Part 7, Rule 325.10705. The bacteriological sample(s) must be taken from the distribution system. The results must be reported to this office by the 10th of each following month. The monthly sample shall be taken from the location specified in your bacteriological sampling site plan (see item 7 below). All samples must be analyzed by a certified laboratory. This office must be notified immediately if a positive bacteriological result is detected at any time.
6. A bacteriological Sampling Site Plan is required per Rule 325.10704 of Part 7. The plan identifies sites in the distribution system that will be used for routine sampling and further identifies repeat sites upstream

and downstream of the routine sampling site to be used in case a routine sample is positive for total coliform. A blank Sampling Site Plan template will be provided to business. The Sampling Site Plan shall be submitted for review and approval *prior* to collection of the bacteriological samples.

7. Part 23, *Emergency Response Plans*, requires that an Emergency Response Plan be prepared for implementation in the event of emergencies for nontransient noncommunity water systems. The plan outlines procedures and identifies personnel and equipment that can be implemented if there is a water system emergency, such as water contamination. The plan should be kept in a location that is easily accessible to the facility owner(s) and/or the operator. A blank template will be provided to business.
8. Cross Connections between public water supplies and a secondary source are prohibited per Part 14, *Cross Connections*. Backflow prevention devices are required wherever the possibility for a cross connection between the public water supply and a contaminated water supply exist.
9. Part 15, Rule 325.11506, requires a supplier of noncommunity water to retain records on or near its premises. Records of bacteriological analyses must be kept for at least five years. Records of chemical and radiological analyses must be kept for at least 10 years. Records concerning any emergency or public notification regarding this water system must be kept for at least three years. These records must be available for our inspection. We recommend that you keep your water supply records in one place for easy access. A binder containing well logs, maintenance logs, the most current test results, and important telephone contacts would aid in keeping your records up to date.
10. As specified in Act 399 §325.1011a, an annual fee shall be assessed on each noncommunity water supply. This fee is based on the population category and is due by November 30th each year. An invoice will be sent to business annually requesting payment.

A seven-digit Water Supply Serial Number will be assigned to business. This designation is used to identify your facility for record keeping, correspondence, and tracking purposes. It is very important to include this number on all correspondence with the LHD and on all water samples submitted to the laboratory for analysis.

If you have any questions concerning the contents of this letter or other issues, please contact me by phone at _____, by email at _____, or by mail at the address above. I look forward to meeting with you in the near future.

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: October 1, 1999	Subject: New Systems Capacity Assessment For Nontransient Noncommunity Public Water Systems		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☐ External/Interpretive
Revised Date:	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
Reformatted Date: January 7, 2013	Number: ODWMA-399-014	Page: 1 of 7	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

As a result of the 1996 amendments to the federal Safe Drinking Water Act, the state of Michigan must implement a capacity development program or risk the United States Environmental Protection Agency withholding 20 percent of the Drinking Water Revolving Loan Fund capitalization grant. One of the elements of this program is to ensure that all new community public water systems commencing operation after October 1, 1999, demonstrate technical, financial, and managerial capacity with respect to each national primary drinking water regulation.

The References section of this policy lists rules, policies, and documents that establish minimum requirements, describe acceptable practices, and/or provide guidance that may be used to develop and assemble the information necessary for the Office of Drinking Water and Municipal Assistance (ODWMA), or its agent, to perform a capacity assessment at a community or nontransient noncommunity public water system.

The applicant seeking a construction permit for a proposed community or nontransient noncommunity public water system is responsible to compile the information necessary for the ODWMA, or its agent, to conduct the capacity assessment.

This policy replaces policy DWRP-03-014, New Systems Capacity Assessment for Nontransient Noncommunity Public Water Systems, dated October 1, 1999.

AUTHORITY:

1. Capacity Development Program

Authority for Michigan's capacity development program originates in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), MCL 325.1001 *et seq.* and administrative rules, R 325.10101 *et seq.*

2. Capacity Assessments

MCL 325.1003b allows the DEQ to conduct capacity assessments. New system capacity assessments are covered in MCL 325.1004(2), which:

- a. Directs the DEQ to evaluate the adequacy of the proposed water supply.

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- b. Directs the DEQ to conduct a capacity assessment and determine if the system has technical, financial, and managerial capacity to meet all requirements under Act 399.
- c. Allows the DEQ to return plans and specifications to the applicant if inadequate.
- d. Allows the DEQ to reject plans and specifications if the waterworks system will not satisfactorily provide for the protection of public health.
- e. Allows the DEQ to deny a permit for construction if the capacity assessment shows that the proposed system does not have adequate technical, financial, or managerial capacity to meet the requirements under Act 399.

3. Criteria for Capacity Assessments

MCL 325.1008 directs the DEQ to consider a water supply's unique characteristics when specifying design and operation standards and establishing criteria for capacity assessments.

4. Order The Water Supply To Make Changes

MCL 325.1015 directs the DEQ to inspect a water supply and determine its adequacy to protect the public health. If not adequate, the DEQ may order alterations in the waterworks system or its method of operation.

STAKEHOLDER INVOLVEMENT:

Prior to the drafting this policy in 1999, meetings were held with internal and external stakeholders to determine how to implement the capacity development program including how to ensure new systems had technical, managerial, and financial capacity to meet the requirements of Act 399 and protect the public health.

DEFINITIONS:

"Capacity assessment" – an evaluation of the technical, financial, and managerial capability of a community supply or nontransient noncommunity water supply to comply and maintain compliance with all requirements of Act 399 and the rules promulgated under Act 399. See MCL 325.1002 Definitions.

"Capacity plan" – information necessary for the DEQ or its agent to conduct the Capacity Assessment.

"Plans and specifications" – drawings, data and a true description or representation of an entire waterworks system or parts of the system as it exists or is to be constructed, and a statement on how a waterworks system is to be operated. See MCL 325.1002 Definitions.

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POLICY:

1. For Technical Capacity

The assessment of technical capacity will be performed throughout the permit process. It begins with a review and approval of the information submitted with the Permit Application and observed during the well site inspection, resulting in the issuance of the Construction Permit. The assessment of technical capacity concludes with the inspection of facilities and information provided prior to Final Approval.

2. For Financial Capacity

The assessment of financial capacity will be based on a review of the financial details of the proposed water system, hereafter referred to as a Financial Plan. The financial plan will only cover the operation and maintenance of the water system, not the entire business. An approved financial plan is required for Final Approval.

Details of the water system Financial Plan may include:

An analysis comparing the development of the proposed, new public water supply to connecting to a community public water supply if a community public water supply is reasonably available.

An identification of resources to address water system costs, including:

- i. Operator certification and training;
- ii. Operational and maintenance costs for the water system that may include:
 1. Utilities;
 2. Chemicals;
 3. System maintenance; and
 4. Monitoring and laboratory costs.
- iii. Administrative costs that may include:
 1. Emergency repairs or contingency plan funds;
 2. Permit fees for water system construction; and
 3. Annual water supply fees.

A statement from the water system owner on the financial capacity of the proposed water system to meet the requirements of Act 399.

3. For Managerial Capacity

The assessment of managerial capacity will be based upon a review of the managerial details of the proposed water system, hereinafter referred to as the Managerial Plan. This plan will only cover the management of the water system, not the entire business. The Managerial Plan must be approved prior to Final Approval.

Details of the water system Managerial Plan may include:

- Designation of a properly certified operator for the facility, as required by the Michigan Safe Drinking Water Act;
- Acknowledging the need for on-going training to keep operators current and allow them to maintain the required certification;
- A contingency plan to address the appropriate response to a temporary loss of water service, including:

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- i. Closure;
- ii. Obtaining an alternate source of water;
- iii. Public notification procedures;
- iv. An inventory of contractors and suppliers;
- v. A method for notifying the local health department;
- vi. Emergency repair procedures; and
- vii. Cross connection control as covered during the inspection prior to Final Approval.

PROCEDURES:

WHO	DOES WHAT
Applicant	Permit Application and Capacity Development Plan Owners, or agents acting on their behalf, submit a capacity plan and an application with required documentation for review and approval. At a minimum, the following information must be submitted with the permit application: • Name, address, and telephone number of owner(s); • Facility name, address, and telephone number; • Facility type and/or number of service connections; • Ownership: Public or Private; • Population to be served and months of operation; • Contractor name, address, and telephone number; • Calculated or estimated system capacity (gallons per minute); and • Site plan with proposed well location(s) showing isolation from buildings, property boundaries, potential sources of contamination, etc.
ODWMA District Staff or its agent	Well Site Inspection Conducts an on-site inspection of the proposed well site for determining its acceptability.
ODWMA District Staff or its agent	Issuance of Construction Permit Reviews the application, rejects the application, or approves and issues the Construction Permit.

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WHO	DOES WHAT
ODWMA District Staff or its agent	Final Approval Based on a satisfactory inspection of the completed construction, notifies the owner that the system is approved to supply water to the public. The inspection, at a minimum, includes the following: • A site inspection of the newly constructed well and distribution system including cross connection inspection; • Receipt of an acceptable well record from the contractor; • Receipt of analyses indicating compliance with applicable drinking water standards; and • Approval of managerial and financial plans.

REFERENCES:

1. Rules

Rules promulgated under Act 399 address technical and managerial capacity criteria. Specifically, the following Parts of the rules cover items in a capacity assessment.

- a. Part 7 – *Surveillance, Inspection, and Monitoring* establishes monitoring requirements for public water supplies and outlines the oversight responsibilities of the DEQ.
- b. Part 8 – *Groundwater Sources* establishes the procedure for approval of proposed wells, including the requirement for a hydrogeological study. This part also identifies well construction requirements and the necessary well appurtenances for all community water supplies (CWSs).
- c. Part 9 – *Surface Water Sources* establishes requirements for the development of a surface water source, including evaluation criteria and intake design.
- d. Part 10 – *Treatment Systems and Pumping Stations* establishes the treatment requirements for systems relying upon a surface water or groundwater under the direct influence. It also describes some of the design requirements for pumping stations.
- e. Part 11 – *Distribution Systems and Storage Tanks* establishes requirements for design and installation of water mains and storage tanks.
- f. Part 12 – *Reliability* describes the requirements for maintaining the reliability of public water supplies to assure a continuous supply. Included in this section is the requirement to identify existing and projected system needs on a 5- and 20-year basis, and to propose a method of complying with system capacity requirements. This section also establishes the minimum number of wells, the requirement for standby power, and the procedure for responding to an interruption in service.
- g. Part 13 – *Construction Plans and Specifications and Permits* prescribes requirements of CWSs regarding the submission of plans and specifications or other pertinent information for the construction of a waterworks system. It includes the requirement for

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an Engineering report, basis of design, and a cover letter explaining the plans and specifications.

- h. Part 14 – *Cross Connections* requires a Community Water System to develop a cross connection control program.
- i. Part 16 – *General Plans* identifies the items required in a general plan or map of the water system.
- j. Part 17 – *Ownership of Public Water Supplies* identifies the requirements for private ownership of a public water supply to be approved, including the need for a local governmental resolution, a stipulation to conditions, and an escrow fund.
- k. Part 19 – *Examination and Certification of Operators* identifies the certification requirements for operators in charge of water treatment and distribution systems. It includes continuing education requirements to maintain the certification.
- l. Part 23 – *Emergency Response Plans* requires the preparation of a plan for emergency response and requires notification of the DEQ when an emergency affecting the public health is discovered.

2. Guidance Information

Refer to these documents when conducting capacity assessments:

- a. *Recommended Standards For Water Works*, prepared by the Great Lakes-Upper Mississippi River Board Of State Sanitary Engineers, may be purchased from the Health Education Services, P.O. Box 7126, Albany, New York 12224, telephone 518-439-7286, or on the Internet at <http://www.hes.org/>.
- b. *Suggested Practices For Waterworks Design, Construction, And Operation For Type I Public Water Supplies*, prepared by the DEQ and available on the Internet at <http://www.michigan.gov/deqwater>, click on Drinking Water, Community Water Supply.

3. Policies

Refer to applicable policies when conducting capacity assessments. Policies include, but are not limited to:

- a. Permit requirements for water main construction
- b. Aquifer test requirements for public water supply wells
- c. Requirements for use of high-density polyethylene water main
- d. Grouting of community water supply wells
- e. Lead and Copper Implementation
- f. Design and operational requirements for arsenic removal treatment systems for compliance with the arsenic maximum contaminant level
- g. Classification of public water supplies

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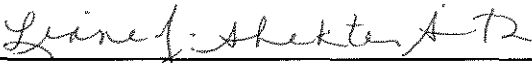
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4. Other Documents

Forms, templates, explanations of requirements, and other guideline documents are available to distribute to applicants and water supplies to help them comply with Act 399. These include but are not limited to:

- a. Monitoring guides and monitoring schedules
- b. Sample site plans
- c. Emergency response plans
- d. Explanation of annual fees
- e. Non-municipal source water protection guide

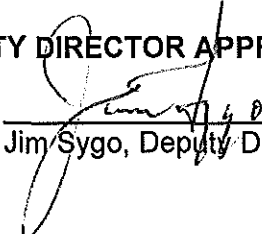
OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

12-28-2012
Date

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

1/7/2013
Date

NONCOMMUNITY WATER SUPPLIES

OWNERS' GUIDE



The Michigan Safe Drinking Water Act (Act 399) was enacted in 1976 and enables the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to maintain primacy (state authority) over the drinking water program in our state. Local health departments (LHDs) are under contract with EGLE to maintain the local noncommunity water supply programs of Michigan.

DEFINITIONS

NONCOMMUNITY SUPPLY

“Noncommunity supply” means a water supply that is not a community supply, which has 15 service connections or serves at least 25 individuals on an average daily basis for not less than 60 days per year.

A **noncommunity water supply system (NCWS)** may be further broken down into two categories, depending on the use of the supplies.

TRANSIENT: A transient NCWS is a supply that serves 25 or more people a day at least 60 days of the year (or has 15 or more service connections) and does not meet the definition of a nontransient NCWS. Examples would include:

- ✓ Motels
- ✓ Churches
- ✓ Restaurants
- ✓ Parks and Campgrounds
- ✓ Highway Rest Areas



NONTRANSIENT: A nontransient NCWS is a supply that serves the same 25 or more people at least 180 days of the year. Examples would include:

- ✓ Schools
- ✓ Industries
- ✓ Child Care Centers
- ✓ Office Buildings



RESPONSIBILITIES OF A NCWS OWNER

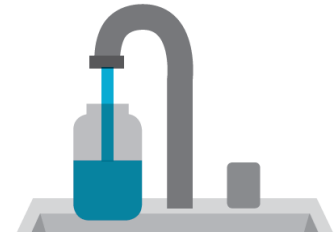
- ✓ Maintain and operate water supplies in a safe and sanitary condition.
- ✓ Collect water samples to assess compliance with drinking water standards.
- ✓ Notify the public in cases of noncompliance with standards or sampling requirements.
- ✓ Obtain permits for construction or alteration of water well supplies.
- ✓ Maintain records for NCWSs including sample results and correspondence with LHDs

SANITARY SURVEY

A comprehensive inspection of the well and water distribution system is required every five years. A sanitary survey is a thorough review of the water source, facilities, equipment operation, and maintenance of public water systems for the purpose of ensuring that safe drinking water is provided. Sanitary surveys are conducted by the LHDs and provide an opportunity to educate owners and operators about proper monitoring and sampling procedures, provide technical assistance, and answer questions pertaining to their drinking water supply.

ROUTINE SAMPLING REQUIREMENTS

Routine sampling requirements can vary depending on the population served, risk of contamination, and sampling history. Contact your LHD for your individual sampling frequencies. A typical frequency is:



Transient Supply:

- Coliform bacteria – One sample required every three months.
- Nitrate – One sample per year.

Nontransient Supply:

- Coliform bacteria – One sample every three months.
- Nitrate – One sample per year.
- Chemical – Every year or three years for Arsenic, Metals, Volatile Organic Chemicals, Synthetic Organic Chemicals, Per- and Polyfluoroalkyl Substances, Cyanide, Lead/Copper.

PERMITS

A construction permit is required prior to drilling a noncommunity well or altering an existing noncommunity water supply. The permit is intended to assure appropriate design criteria, including adequate well location with respect to isolation distance from sources of contamination, proper construction methods and materials, and any other factors that could impact the water supply. Contact your LHD for more information on obtaining a permit application.

RECORD KEEPING

NCWSs are identified by a seven-digit water supply serial number (WSSN), sometimes called the public water supply ID (PWSID). To ensure proper identification, this number must be used with all correspondence and sample data submitted to the LHD and laboratories.

ANNUAL FEES

An annual fee is assessed to all NCWSs. The public water supply fee provides funding for State of Michigan and LHD staff to oversee the proper operation of your water supply as required by Act 399, and to help ensure that any water served by your supply to the public is safe to drink or use. This fee is unrelated to sampling fee charges, as the money is not for laboratory services.

The fee is assessed on October 1 for the next fiscal year and is not associated with sampling fees. This fee is adjusted every year by applying the percentage adjustment using the Detroit Consumer Price Index. In addition to the Consumer Price Index adjustment, at the end of the fiscal year, 75% of any unspent fee revenue from previous annual fee payment is applied as a credit adjustment on a pro-rated basis to the fee the following year in accordance with Act 399. The noncommunity supply must pay the annual fee by November 30th each year. If it is not paid by that date, a penalty fee is applied to the balance each month the payment is delinquent.

How does this benefit my facility?

- The fees allow EGLE to maintain a state-run program as opposed to direct federal administration.
- It allows more flexibility, including significant reductions in sampling that would not be available in a federal program.
- It results in a program that better serves public water supply owners and the people of Michigan.

MORE INFORMATION

The environmental health staff at the county or district health departments provide direct service to water supply owners in their jurisdictions. Questions regarding owner responsibilities should be directed to your [local health department](#).

Other information and resources can be found at Michigan.gov/NoncommunityWaterSupply.

This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

To request this material in an alternate format, contact EGLE-Accessibility@Michigan.gov or 800-662-9278.

Chapter 4 Appendices

Sanitary Surveys

<u>Documents</u>	<u>Number of Pages</u>
D03 SWIFT Sanitary Survey Template Letter	5
D05 Significant Deficiencies Policy ODWMA 399-013	6
D10 Cross Connection Control Chart	2
D11 Source Water Assessment Worksheet.....	4
D11.1 Instructions for Completing the Noncommunity Groundwater Supply Source Water Assessment	4
D11.2 Source Water Protection Guide for Non Municipal Public Water Supplies.....	6

Today

PWS Name

Attn: Contact FirstName LastName

Address

Address 2

City, State Zip

RE: Sanitary Survey for PWS Name
WSSN PWSID

Dear Contact First Name Contact Last Name:

This letter reports the results of the sanitary survey of the water system serving PWS Name on Visit Date.

The purpose of this sanitary survey, conducted under the authority of Michigan's Safe Drinking Water Act, Act 399 of the Public Acts of 1976, and Administrative Rules (The Act), is to:

- 1) determine if the system meets minimum construction and operation standards and require corrections where necessary,
- 2) determine if the system currently meets applicable state drinking water standards, and
- 3) establish water quality monitoring (water sampling) requirements.

Eight required elements of a sanitary survey were evaluated. Based on the sanitary survey and additional observations, 0 significant deficiencies, 0 minor deficiencies, and 0 recommendations have been identified.

The required corrective actions must be completed by **Compliance Date**. Photographs and other requested documentation of deficiency resolution must be submitted to this office. Call LHD for re-inspection to verify corrections when necessary.

If you have questions regarding the sanitary survey or monitoring requirements, please contact me at Inspector Phone or Inspector Email.

Failure to comply with any written compliance schedule or requirement will result in escalated enforcement.

Sincerely,



Inspector First Name Last Name

LHD

Title

Parties Present During Sanitary Survey

The assistance of water system representatives mentioned below was very helpful and greatly appreciated. Each person listed below will receive a copy of this letter.

Name	Organization
Name	Organization

WS operating category Drinking Water Certified Operator Required

This water system is required to have a certified drinking water operator. Records currently show those below as being a designated certified operator of this water system.

Name
Name

According to the Act, a public water supply shall notify LHD within 7 days when the supply no longer has the services of an operator in charge, or if there is a change in operators.

Water System Summary

Water system summary: General

Water system summary: Treatment

List of facilities assigned and evaluated during survey:

Facility Name	Facility ID
Facility	State Assigned ID
LHD: This table should not be blank.	

Observations

Sanitary surveys are required to evaluate the following eight required elements: Source, Pumps, Finished Water Storage, Treatment, Finished Water Storage, Monitoring/Reporting Data Verification, Management & Operations, and Operator Compliance. Michigan also recognizes other survey elements. If one of those elements is not listed below, that element was found to be in compliance or not applicable at this water supply.

Deficiencies:

Survey Section	Survey question which prompted the deficiency	Significant Deficiency Comments & Observations	Corresponding Attachment ID Number
Section	Long Question	Comments	ID
There were no <u>significant</u> deficiencies identified during this site visit.			

Survey Section	Survey question which prompted the deficiency	Minor Deficiency Comments & Observations	Corresponding Attachment ID Number
Section	Long Question	Comments	ID
There were no <u>minor</u> deficiencies identified during this site visit.			

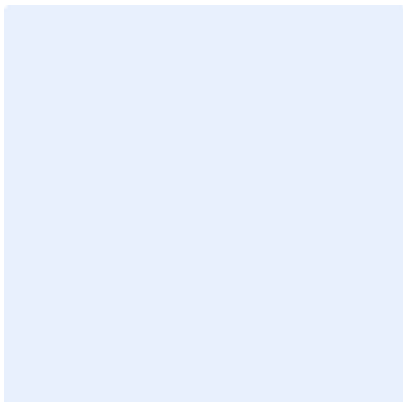
Recommendations:

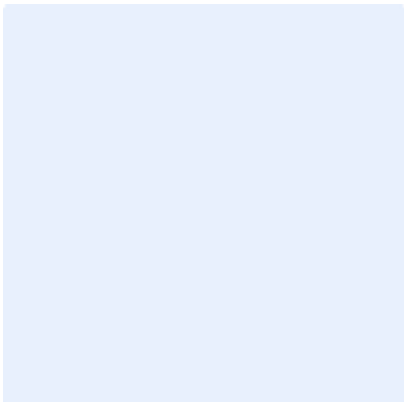
Survey Section	Survey question which prompted the recommendation	Items described below, while not required to be implemented, are strongly recommended to protect public health.	Corresponding Attachment ID Number
Section	Long Question	Comments	ID
There were no recommendations recorded during the site visit.			

Additional Observations

Survey Section	Survey Question	Observations	Corresponding Attachment ID Number
Section	Long Question	Comments	ID
There were no additional items identified during this site visit.			

Observation Attachments

Attachment ID: ID	
	Description
No observation attachments	

Attachment ID: ID	
	Description
End of attachments	

Monitoring (Sampling) Requirements

Unless you are required to sample more frequently as a condition of a license or policy, PWS Name must meet the following sampling schedule. The reports must be kept at the water system and sent to LHD for compliance.

Monitoring Schedule

Analyte	Schedule	Sample Point
Routine Schedule	Frequency	Location Code
Note to LHD: This table should not be blank.		

Calendar Quarters: January – March; April – June; July – September; October – December

Sample Points

Sample Point Code	Exact Location	Sample site to satisfy which rule		
Location Code	Location Name	Note 1	Note 2	Note 3
Note to LHD: This table should not be blank.				

Sampling Procedures

- Remember to record the WSSN and Sample Location on each water sample form. Without this information on the sample form, you may not be credited for collecting a required sample.
- If a laboratory other than the EGLE laboratory is used for sample analysis, it must be certified by EGLE for the analysis performed, and a copy of the results of the analysis must be provided to this office by the water supply owner/operator as soon as possible to avoid monitoring violations.
- The Act specifies that it is the owner/operator's responsibility to collect and submit the required water samples for analysis and to maintain and operate the water system in a sanitary condition.

Monitoring and Maximum Contaminant Level (MCL) Violations

During the inspection, the items noted below, and self-reported compliance data were reviewed and discussed.

Unresolved MCL Violations	
Analyte Name	Determination Date
There are no unresolved MCL violations.	
Unresolved Monitoring Violations	
Analyte Name	Determination Date
There are no unresolved monitoring violations.	

Violation History

This section covers: Open Date – Close Date

Maximum Contaminant Level Violation Count: 0

Monitoring Violation Count: 0

Other Violation Count: 0

Site Visit History

Reason	Date of visit
Reason	Date
There have been no recorded site visits since the last survey.	

Understanding the Report

Responding to this report

Be prompt. You must respond to this report within 30 days. Outline how you corrected deficiencies or your plan for addressing them (include hard dates).

Severity of observations

Each observation is categorized into one of three tiers based on its severity:



Significant deficiencies require immediate action because they may put the consumer at risk. These must be fixed or be part of an approved corrective action plan within **10 days** of receiving this report, otherwise a treatment technique violation will be issued requiring public notice.



Minor deficiencies need prompt correction to keep the water system functioning for the long term. If ignored, minor deficiencies may quickly become significant problems.



Recommendations are helpful ideas that will enable the water system to meet required criteria or other industry standards.

Don't Forget

You need the approval of the LHD before improving your system, modifying its treatment process, or adding new water sources.

The water system is responsible for keeping its own records. Some records must be kept for as long as ten years.

The SWDA (Safe Water Drinking Act) specifies that it is the owner/operator's responsibility to collect and submit the required water samples for analysis and to maintain and operate the water system in a sanitary condition. Failure to comply with the compliance schedule identified in this letter will result in escalated enforcement.

Operators and managers are responsible for knowing when to complete a Level 1 Assessment based on coliform sampling results.

You can find additional guidance by calling the local health department or online at www.michigan.gov/egle/noncommunitywatersupply.

EGLE Laboratory sample bottles, instructions and report forms may be available at our office or by ordering them directly from the EGLE laboratory. Payment of EGLE laboratory fees is the responsibility of the owner/operator of the water supply.

Analyte	Sample Container	Test Code
Coliform bacteria	Unit 30	BPTC
Nitrate / Nitrite	Unit 32	R
Arsenic	Unit 36ME	CAS
Metals	Unit 36ME	CMET2
Cyanide	Unit 36CN (unchlorinated water)	CCN
VOC	Unit 36VO	CXVO
SOC	Unit 36LP Unit 36HB Unit 36PT	CXLP CXHB CXPT3
PFAS	Unit PFAS	CXPFAS
Disinfection By Products (TTHM and HAA5)	Unit 36VO/HA	CXTM CXHA
Lead and Copper	Unit 36CC (1 for each location)	CCUB
Lead and copper samples shall be collected first-draw with a flow rate like the rate used under normal use (as in filling a glass of water). The fixture must have been used the day prior. Procedures shall not include a "pre-stagnation flush" but must involve a minimum six-hour stagnation period prior to first-draw sampling.		

Annual Fee

In accordance with R. 325.1011b, Sec 11b (1) of Michigan's Safe Drinking Water Act, all noncommunity water supplies are assessed an annual fee. The fee is assessed each October 1st for the next fiscal year. Invoices for the fees are generally sent out in late October or early November.

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURES		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: January 12, 2010	Subject: Significant Deficiencies		Category: ☒ Internal/Administrative ☐ External/Non-Interpretive ☐ External/Interpretive
Revised Date:	Program: ODWMA-Drinking Water Program		
Reformatted Date: December 28, 2012	Number: ODWMA-399-019	Page: 1 of 6	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, ISSUE:

The term, Significant Deficiency, was first referenced in the federal Interim Enhanced Surface Water Treatment Rule. In the recently promulgated federal Groundwater Rule, the definition of a Significant Deficiency and the follow up actions required when a Significant Deficiency is identified were greatly expanded. This policy sets forth the criteria that Office of Drinking Water and Municipal Assistance (ODWMA) staff will use to determine if a violation at a Public Water Supply (PWS) is a Significant Deficiency, and outline the steps required to resolve a Significant Deficiency, in accordance with federal law and Michigan's federal primacy requirements.

In this policy, identification of a Significant Deficiency is not limited to only those Public Water Supplies that obtain their water solely from a groundwater source. Rather, this policy applies to all Public Water Supplies: groundwater (Subpart S) and those that obtain their water from a surface water source, or from groundwater under the influence of surface water (Subpart H).

AUTHORITY:

40 CFR Parts 9, 141, and 142 National Primary Drinking Water Regulations: Groundwater Rule; Final Rule, November 8, 2006. The Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and Parts 6 and 7 of the Administrative Rules.

STAKEHOLDER INVOLVEMENT:

This policy/procedure underwent a stakeholder review process in 2010.

DEFINITIONS:

"Groundwater System" - any PWS that is defined as a Subpart S system, including consecutive systems receiving finished groundwater.

"Public Water Supply (PWS)" - a waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water. It does not include a waterworks system that supplies water to only one living unit or a waterworks system consisting solely of customer site piping.

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"Community Water Supply (CWS)" - a public water supply that provides year-round service to not fewer than 15 living units or that regularly provides year-round service to not fewer than 25 residents.

"Non-Community Water Supply (NCWS)" - a public water supply that is not a community supply, but that has not fewer than 15 service connections or that serves not fewer than 25 individuals on an average daily basis, for not less than 60 days per year.

"Safe Drinking Water Information System" or "SDWIS" – the database system used by the Michigan Department of Environmental Quality to report community water supply drinking water compliance data to the United States Environmental Protection Agency.

"Sanitary Survey" - an evaluation, including an on-site review of a waterworks system or a portion of the waterworks system, including all of the following applicable components for existing or potential health hazards for the purpose of determining the ability of the PWS to produce, treat, and distribute adequate quantities of water meeting state drinking water standards:

1. Source
2. Treatment
3. Finished water storage
4. Pumps, pump facilities, and controls
5. Monitoring, reporting, and data verification
6. System management and operation
7. Operator compliance with state requirements
8. Cross connection program
9. Reliability of the waterworks system
10. Distribution system
11. Security measures

"Significant Deficiency" - a defect in design, operation or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that is determined to be causing or has the potential to introduce contamination into the PWS.

"Subpart H" - the federal surface water treatment series of rules (40 CFR §§141.70 et seq., 141.170 et seq., 141.500 et seq., National Primary Drinking Water Regulations) which establishes criteria under which filtration is required as a treatment technique and it includes treatment technique requirements for PWS whose source water is from surface water or groundwater under the influence of surface water.

"Subpart S" - the federal Groundwater Rule (40 CFR §141.400, National Primary Drinking Water Regulations) which establishes criteria for sanitary surveys, monitoring, treatment and other corrective actions for water supplies using a groundwater source. It does not apply to public

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water supplies that combine all of the groundwater with surface water or with groundwater under the direct influence of surface water prior to treatment under Subpart H.

"Subpart S Corrective Actions" - After consultation with the state, groundwater systems cited as having a significant deficiency must implement one or more of the following corrective action alternatives:

1. Correct all significant deficiencies
2. Provide an alternate source of water
3. Eliminate the source of contamination
4. Provide treatment that reliably achieves at least 4-log removal of viruses

"Treatment Technique" - a minimum treatment requirement or a necessary methodology or technology that is employed by a PWS for the control of the chemical, physical, biological, or radiological characteristics of the PWS.

POLICY:

All ODWMA staff shall adhere to this policy when identifying and resolving Significant Deficiencies at Public Water Supplies.

Identification of a Significant Deficiency:

1. In the course of reviewing monitoring data or operation reports, conducting surveillance visits or sanitary surveys, ODWMA staff may discover violations of the Safe Drinking Water Act or that unsafe practices exist at a PWS that have the potential to jeopardize public health. At that time, an evaluation shall be made as to whether or not the violation(s) or the unsafe practices should be identified as a Significant Deficiency using the following criteria. In general, if one or more of the following criteria are met, the violation(s) or unsafe practices should be identified formally as a Significant Deficiency.

- a. **Criteria 1:** The violation(s) provided an opportunity or a potential for direct contamination of the PWS.

Examples: improperly constructed well, unprotected cross connections, inadequate inspection and/or cleaning of finished water storage tanks

- b. **Criteria 2:** The violation(s) demonstrated a failure in the treatment required to meet drinking water standards.

Examples: improper application of treatment chemicals, lack of redundant mechanical components in the treatment system

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- c. **Criteria 3:** The violation(s) demonstrated a failure to confirm that the water supply was safe for public consumption.

Examples: failure to sample, monitor, or report, improper recordkeeping

- d. **Criteria 4:** The violation(s) demonstrated a failure to deliver safe water.

Examples: low pressure in the distribution system, inadequate preventative maintenance

- e. **Criteria 5:** The violation(s) demonstrated a failure to properly operate, maintain, manage, financially support or provide a reliable, adequate supply of safe drinking water.

Examples: no emergency response plan, failure to meet water supply demands

2. A decision to identify a violation or set of violations as a Significant Deficiency shall be discussed with and approved by the staff person's first-level supervisor.

PROCEDURES:

1. After a Significant Deficiency has been identified, a Significant Deficiency Violation Notice (SDVN) must be sent within 30 days to the PWS. The SDVN shall list all known violations at the PWS and specifically identify among the list of violations which are considered to be significant deficiencies. The ODWMA approved SDVN letter template must be used to draft the Notice. This template is located on the ODWMA shared drive with the other Drinking Water Violation Notice and Second Violation Notice letter templates.
2. The SDVN template must contain a statement that the severity of the violation(s) or the conditions present at the PWS is considered a Significant Deficiency, an explanation what the Significant Deficiency is or involves, and a statement that uncorrected Significant Deficiencies increase the risk to the public of drinking contaminated or unsafe water. Content of the SDVN must either include: 1) a directive to the PWS to implement a specific corrective action to resolve the Significant Deficiency or 2) require the PWS staff to consult with the DEQ within 30 days of the date of the SDVN, regarding the appropriate corrective action to take. The date on the SDVN is considered Day 1, and if it is at a community water supply (CWS), the date must be entered into SDWIS as the date the Significant Deficiency was discovered.
3. If the SDVN directed the PWS to consult with DEQ within 30 days, ODWMA staff shall promptly honor all requests by the PWS for this consultation. In all cases, however, staff are highly encouraged to contact or meet with PWS staff after any violation notice or SDVN is sent, including those that contained a directive to the PWS to undertake a

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specific corrective action. During the meeting with the PWS, the corrective action plan and the timeframe needed to resolve the violation(s) and/or significant deficiencies shall be determined.

4. If the PWS is a groundwater or Subpart S supply, and the PWS chooses not to consult with the DEQ within 30 days of receipt of the SDVN on the appropriate corrective actions needed to resolve the Significant Deficiency, a Violation Notice (VN) shall be prepared and sent to the PWS citing a violation of R 325.10612a(1)(d); failure to consult with the department on the appropriate corrective action within 30 days receipt of the SDVN.
5. If the PWS cannot complete its corrective action plan and return to compliance within 120 days (Day 120) from the date the SDVN was sent (Day 1), it is highly recommended that the PWS enter an administrative or judicial consent order that includes a corrective action schedule. The lead ODWMA staff person for the case and their direct supervisor shall contact the ODWMA Field Operations and Environmental Health Chiefs to request a meeting to discuss possible actions that will result in an enforceable administrative or judicial order that includes a plan for the PWS to resolve the Significant Deficiency. Alternatively, if circumstances warrant it, DEQ can issue a Sec. 325.1015 emergency order.
6. If the PWS is a Subpart S system, and the PWS has failed to correct the Significant Deficiency or to enter into an order with a corrective action schedule by Day 120 after the SDVN is sent; the PWS will be in violation of the treatment technique standard and will be required to comply with Tier 2 Public Notice Requirements. The PWS shall be sent a VN citing violation of the treatment technique standard (R 325.10612b(1) and include language that the PWS must immediately implement Tier 2 Public Notice requirements.
7. If it is determined that the PWS is not complying with Tier 2 Public Notice requirements while it is violation of the treatment technique standard, another VN shall be sent to the PWS citing a violation of R 325.10612b(4).
8. The PWS is required to notify DEQ in writing within 30 days of completing any DEQ approved corrective action plan and schedule. If the PWS was required to do treatment plant or distribution system construction, operation, or maintenance work to correct the significant deficiency, the ODWMA lead staff person must verify that the required work was completed by conducting an on-site visit within 30 days after receiving notification of completion from the PWS. (Examples of this type of work include equipment maintenance or replacement, addition of new treatment chemicals, construction of new storage structures, or a new well, etc.) If the PWS does not notify DEQ within 30 days of the completion of the corrective action, a VN shall be sent to the PWS citing a violation of R 325.10739b(1)(b).

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WHO	DOES WHAT
ODWMA Staff	Determine that a potential significant deficiency exists at a PWS. Notify the PWS that the violation or violations may be cited as a Significant Deficiency.
ODWMA Field Operations or Environmental Health Section Manager	Approve declaration of a significant deficiency.
ODWMA Staff	Send a SDVN to the PWS within 30 days of discovery of the significant deficiency.
ODWMA Staff	Enter the date on the SDVN into SDWIS as the date the significant deficiency was identified.
ODWMA Staff	Specify the necessary corrective action and timetable and/or promptly honor all requests by the PWS for consultation to determine the corrective action within 30 days after the date on the SDVN.
ODWMA Compliance and Enforcement Staff	Work on negotiating an administrative or judicial order; or issue an Act 399 emergency order to establish an enforceable corrective action schedule that resolves the significant deficiency and or treatment technique standard violation.
ODWMA Staff	Monitor compliance schedule and assure PWS meets schedule and timeframe for completion of all corrective actions. Ensure that all SDWIS tracking requirements are updated and completed in a timely manner.
ODWMA Staff	Within 30 days after receipt of written notification from the PWS that the significant deficiency has been corrected, verify completion by conducting an on-site visit. An on-site visit is not required if the corrections were to submit written documents or reports such as a reliability study or emergency response plan.

OFFICE CHIEF APPROVAL:


Liane J. Shekter Smith, Chief
Office of Drinking Water and Municipal Assistance

12-28-2012
Date

Cross Connection Control Chart

A **Cross Connection** is an actual or potential connection between a potable water system and any source or system not intended for potable use.

“Backflow” means water of questionable quality, wastes, or other contaminants entering a water supply due to a reversal of flow. It can occur by either “backpressure” or “backsiphonage”.

“Backpressure” occurs when the downstream pressure exceeds the upstream pressure.

“Backsiphonage” is caused by a vacuum or partial vacuum in a water system.

TYPE OF BACKFLOW PREVENTION	DEGREE OF HAZARD	FOR BACK PRESSURE	FOR BACK SIPHONAGE	IS CONTINUOUS PRESSURE ALLOWED	STANDARDS	SOME COMMON APPLICATIONS
Air Gap	High or Low	Yes	Yes	N/A	Is at least 2 times the inside diameter of the water inlet pipe, but not less than 1-inch and not greater than 12-inches	Drinking fountain, water softener, ice machine (Best protection of all if done properly)
Reduced Pressure Principle Backflow Preventer (RPZ)	High or Low	Yes	Yes	Yes	ASSE 1013 AWWA C511 CSA CAN/CSA-B64.4	Boilers, equipment with chemicals added, fire suppression, sewage pumps, dental equip.
Dual Check Valve w/Intermediate Atmospheric Vent	Low	Yes	Yes	Yes	ASSE 1012 CSA CAN/CSA-B64.3	Non-chemical boiler, garbage can washer
Double Check Valve Assembly	Low	Yes	Yes	Yes	ASSE 1015 AWWA C510	Fire sprinkler system (no chemicals)
Backflow Preventer for Beverage Dispensing Equipment (carbonated & non-carbonated)	Low	Yes	Yes	Yes	ASSE 1022	Beverage dispensing machines (coffee, tea, juice) Carbonated beverage vending machines
Pressure Vacuum Breaker Assembly	High or Low	No	Yes	Yes	ASSE 1020	Lawn irrigation system, dishwasher, pools
Atmospheric Vacuum Breaker	High or Low	No	Yes	No	ASSE 1001 CSA CAN/CSA B64.1.1	Lawn irrigation, dishwasher, garbage disposers, urinal, toilet
Hose Bib Vacuum Breaker	High or Low	No	Yes	No	ASSE 1011 CSA CAN/CSA B64.2	Janitor closet, hose faucets
Anti-Siphon Type Water Closet Flush Tank	Low	No	Yes	No	ASSE 1002 CSA CAN/CSA B125	Toilet tanks (for ball cock assemblies)
Wasting Tee	High	Yes	Yes	No	None	Chemical dispenser units threaded on sinks that have a pre-existing AVB.

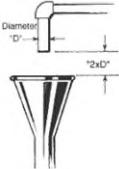
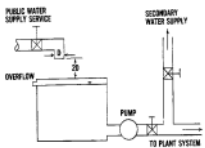
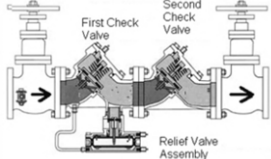
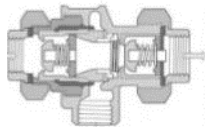
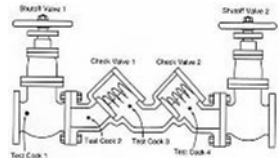
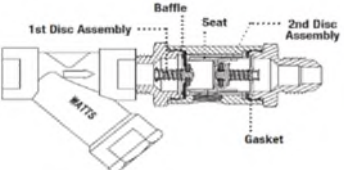
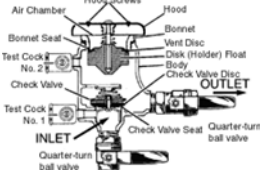
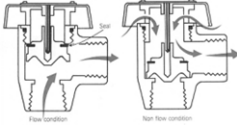
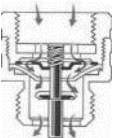
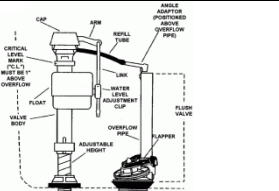
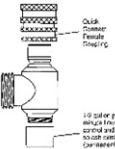
Mechanical Backflow Prevention Terms:

“Assemblies” are units that can be tested after installation. “Vacuum breaker” means it may protect against high hazard. “Devices” are units that cannot be tested after installation. “Check valve” means it may protect against low hazard only.

“High Hazard” = hazardous to human health

“Low Hazard” = aesthetic affect

Note: This table does not include all types of backflow prevention methods/preventers. It addresses common situations in noncommunity drinking water systems. Refer to the Cross Connection Rules Manual (CCRM) & Michigan Plumbing Code if needed. New equipment installation must meet current Plumbing Code requirements as shown in table above. Chapter 4.8 of the CCRM requires testable assemblies must be tested upon installation, after repair/relocation, or at the frequency determined by an approved cross connection control program. Recommend that all preventers are visually inspected annually by operator or certified backflow tester. It is recommended that all high hazard situations and RPZs be tested annually.

Type of Backflow Prevention	Picture/Illustration
Air Gap	 
Reduced Pressure Principle Backflow Preventer (RPZ)	 
Dual Check Valve with Intermediate Atmospheric Vent	 
Double Check Valve Assembly	 
Backflow Preventer for Beverage Dispensing Equipment (carbonated & non-carbonated)	 
Pressure Vacuum Breaker Assembly	 
Atmospheric Vacuum Breaker	 
Hose Bib Vacuum Breaker	 
Anti-siphon type water closet flush tank	 
Wasting Tee	 



NONCOMMUNITY GROUNDWATER SUPPLY SOURCE WATER ASSESSMENT WORKSHEET

Data collection to complete the source water assessment worksheet is an extension of the Sanitary Survey conducted as part of the Noncommunity Public Water Supply Program. Please complete the following as appropriate. Email completed SWA Worksheets to EGLE-EH@michigan.gov (preferred) or fax to the Source Water Unit at 517-241-1328.

System Name:	WSSN:	Source WSF ID:
Assessed By (Include Address and e-mail):	Assessment Date:	
System Contact Information (Include Address and e-mail):		

GEOLOGIC SENSITIVITY - $SWAS_g$

CCM Table: Use the attached Geologic Sensitivity Table

CCM (feet)	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 45	45 to 49	50 or greater	CCM Pts. Deducted
Pts. Deducted	0	3	6	9	12	15	18	21	24	27	30	

CPCM Table: Use the attached Geologic Sensitivity Table

CPCM (feet)	0 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 or greater	CPCM Pts. Deducted
Pts. Deducted	0	3	6	9	12	15	18	21	24	27	30	

30 Points - CCM points - CPCM points = $SWAS_g$	

WELL CONSTRUCTION, MAINTENANCE AND USE - $SWAS_w$

Well Grouting

Casing sealed entire length in accordance with 1994 Revisions	Casing sealed by driven casing method - 1994 Revisions	Casing sealed in accordance with 1967 code	Casing not sealed or status unknown	Enter Points Below
0 pts.	5 pts.	10 pts.	15 pts.	

Well Age

Constructed 1994 or after	Constructed 1976 - 1993	Constructed 1967 - 1975	Constructed Before 1967	Enter Points Below
0 pts.	5 pts.	10 pts.	15 pts.	

Casing Depth

Well cased 200 feet or greater	Well cased from 100 - 199 feet	Well cased from 25 - 99 feet	Well cased <25 feet or not known	Enter Points Below
0 pts.	5 pts.	10 pts.	15 pts.	

Pumping Rate

20 gpm or less	21 - 50 gpm	51 - 100 gpm	Greater than 100 gpm	Enter Points Below
0 pts.	5 pts.	10 pts.	15 pts.	

Sum of pts. from well construction, maintenance, and use - $SWAS_w$	

WATER CHEMISTRY AND ISOTOPE DATA - SWAS_c

Regulated Contaminants	Not Detected	Detected to < ½ MCL	Detected ½ MCL to MCL	Detected Exceeds MCL	Enter Points Below
	0 points	10 points	20 points	50 points	
Nitrates and Nitrites					
VOC's					
SOC's and Pesticides					
Inorganics (arsenic, cyanide, metals)					

Sum of pts. from parameters - SWAS_c	

ISOLATION FROM SOURCES OF CONTAMINATION - SWAS_s**"Potential" Major Sources of Contamination within the SWPA**

Source of Contamination	Number of Sources	Distance From Well (feet)	
Large Scale Waste Disposal			
Land Application of Sanitary Wastewater or Sludge			
Animal Waste Lagoon or Manure Storage			
Landfill			
Bulk Chemical or Chemical Waste Storage			
Fuel Storage Tank			
Other			Enter Points Below
Number of Major Sources >=75 feet and within the SWPA		X 10	

"Potential" Major Sources of Contamination within 75 feet

Number of Major Sources within 75 feet		X 20	

"Potential" Standard Sources of Contamination within 75 feet

Source of Contamination	Number of Sources	Distance From Well (feet)	
Septic Tank or Drainfield or Dry Well			
Sewage Pump Chamber			
Storm or Sanitary Sewer			
Pipeline			
Animal Yard			
Surface Water			
Other			Enter Points Below
Number of Standard Sources within 75 feet		x 10	

“Known” Sources of Contamination within the SWPA

Source of Contamination	Number Of Sources	Distance From Well (feet)	
Part 201 Sites of Environmental Contamination			
Part 213 Leaking Underground Storage Tanks			Enter Points Below
Number of Known Sources within the SWPA		x 25	
Sum of pts. from sources of contamination – SWAS_s			
SWAS_G + SWAS_w + SWAS_C + SWAS_S =			

Comments:

GEOLOGIC SENSITIVITY (SWAS_G) TABLE

DESCRIPTION (PRIMARY MATERIAL)	ASSESSMENT CLASS
CLAY	CM
CLAY & BOULDERS	CM
CLAY & COBBLES	CM
CLAY & GRAVEL	PCM
CLAY & SAND	PCM
CLAY & SILT	PCM
CLAY & STONES	PCM
CLAY GRAVEL SAND	PCM
CLAY GRAVEL SILT	PCM
CLAY GRAVEL STONES	PCM
CLAY SAND GRAVEL	PCM
CLAY SAND SILT	PCM
CLAY SILT GRAVEL	PCM
CLAY SILT SAND	PCM
COAL	PCM
DOLOMITE & SHALE	PCM
GRAVEL & CLAY	PCM
GYP SUM	PCM
HARDPAN	CM
LIMESTONE & SHALE	PCM
SAND & CLAY	PCM
SHALE	CM
SHALE & COAL	PCM
SHALE & LIMESTONE	PCM
SILT & CLAY	PCM
SLATE	CM
SOAPSTONE (TALC)	PCM

Confining Material = CM

3 points deducted for each 5 feet

Partially Confining Material = PCM

3 points deducted for each 10 feet

Note: Greater than 30 points deduction results in a SWAS_G score of 0.



INSTRUCTIONS AND WORKSHEET FOR COMPLETING THE NONCOMMUNITY GROUNDWATER SUPPLY SOURCE WATER ASSESSMENTS

Background

These instructions will provide guidance for local health department (LHD) staff to perform consistent source water assessments of Nontransient Noncommunity Water Supplies (NTNCWS) that obtain drinking water from groundwater sources. NTNCWS assessments were required by the Michigan Safe Drinking Water Act (SDWA), 1976 PA 399, to identify source areas that supply public tap water, inventory the contaminants and assess the source water susceptibility to contamination, and inform the public of the results. There is a need to continue to update assessments that have been completed, and to perform assessments on newly constructed groundwater wells. The assessments for new wells shall be performed after the well has received approval for use. The updates of the previously completed assessments should be performed on the same schedule as the sanitary survey of the water supply.

Source Water Assessment Score (SWAS)

The vulnerability of NTNCWS wells to contamination will be evaluated by determining a Source Water Assessment Score (SWAS). The SWAS has been created as a numeric system that assigns points for situations that represent a “perceived risk” based upon the evaluation of four criteria. A higher SWAS is equated to a greater perceived risk for the NTNCWS source water. The SWAS is the sum of a geologic sensitivity score (SWAS_G); a well construction score (SWAS_W); a score for chemistry and isotope data (SWAS_C); and isolation and control from sources of contamination score (SWAS_S).

Workflow

Tasks and those responsible for completing them are as follows:

- Provide Source Water Assessment (SWA) Worksheet – EGLE staff
- Review the Type II Provisional Delineation Areas on Environmental Mapper or GeoWebFace – LHD staff
- Complete the SWA Worksheet for each source – LHD staff
- Email (preferred) or fax the SWA Worksheet to EGLE – LHD staff
- Determine the susceptibility of the NTNCWS to contaminants – EGLE staff
- Transmit the assessment to the NTNCWS & LHD – EGLE Staff
- File the assessment in the supply file – LHD staff

Office and Field Assessment

Information from well drilling records is critical to the SWAS. As part of SWAS, available well drilling records for NTNCWS wells will be reviewed by the LHD. The lack of information from a well record (or no well record) will increase the SWAS. The Source Water Protection Area (SWPA) locations will need to be reviewed prior to the field assessment. If the LHD cannot locate the SWPA map or notices the water well is not in the correct location, they should not perform the SWA until the location is corrected in Wellogic and a new delineated SWPA is generated. Please contact Wellogic Help at Wellogic@Michigan.gov to update the well location.

Source Water Protection Area

The SWPA is that area contributing source water to public water supply wells in a 10 year time of travel. The size and shape of a SWPA depends on the characteristics of the aquifer, the well, and/or the watershed. It is within the SWPA that potential releases of contaminant could end up in the public water supply well. In Michigan, we no longer rely simply on isolation distances to determine the susceptibility to contamination. SWPA boundaries are delineated using EGLE's Michigan Groundwater Management Tool. The delineated maps are then used to determine a well's susceptibility to contamination from potential or known sources of contamination.

GEOLOGIC SENSITIVITY - SWAS_G

The SWAS_G is factored into the SWAS based on the total thickness of Continuous Confining Material (CCM) such as clay or shale or the total thickness of Continuous Partially Confining Material (CPCM) such as a mixture of sand and clay or sandstone and shale found on the well drilling record. Beginning with a SWAS_G of

30 points, (this represents a well lithology with an associated “high geologic sensitivity), 3 points are deducted for each 5 feet of CCM or 10 feet of CPCM. Where the amount of CCM and/or CPCM indicated on the well drilling record results in a deduction of more than 30 points, the SWAS_G shall be assigned a score of zero (0). The total thickness of CCM and CPCM should be determined from the well drilling record for the NTNCWS well. The greater the amount of CCM or CPCM, the greater the geologic protection provided the NTNCWS well, the greater the number of points deducted, and the lower the resulting SWAS_G.

WELL CONSTRUCTION - SWAS_w

The design, physical condition, and operation of a NTNCWS well may allow the entrance of contaminants into the well despite a high level of intrinsic geologic protection. To account for this possibility, the SWAS is assigned points through the SWAS_w based upon four criteria related to the construction and use of the NTNCWS wells. The SWAS_w is assessed points based upon well grouting, the age of the well, the casing depth, and the pumping rate of the well.

Well Grouting - The well grouting criteria provides an evaluation of sealing of the annular space of a water well. Points are added to the SWAS_w in accordance with the following:

- 0 pts – The well drilling record indicates the casing has been sealed from bottom to top in accordance with R 325.1634a, Construction of wells; **grouting rotary-bored and augered wells**, Rule 134a of Act 368.
- 5 pts – The well drilling record indicates the casing has been sealed to an unknown depth or to a depth of 25 feet, in accordance with R 325.1635, Construction of wells; grouting **driven casing wells**, Rule 135, of Act 368.
- 10 pts – The well drilling record indicates the well was grouted, but the date of construction precedes the 1994 revisions to Act 368, and available evidence suggests the well is not in compliance with current grouting requirements.
- 15 pts – The well drilling record indicates the well was not grouted, no well drilling record is available, or other information suggests the well was ineffectively grouted.

Well Age - The age of a well provides an overall indication of probable conformity to current code requirements for the construction of a well, and an indication of the probable integrity of the well due to deterioration of materials used in the construction of the well. The SWAS_w is assessed a greater number of points as the age of the well increases in accordance with the following criteria:

- 0 pts – A well drilling record is available that indicates the well was constructed after the 1994 revisions Act 368, or a well drilling record is available that indicates the well was constructed in accordance with the 1994 requirements.
- 5 pts – A well drilling record is available that indicates the well was constructed prior to 1994 and after 1976, the year the state of Michigan, SDWA was adopted as the standard for the regulation of public water supply systems.
- 10 pts – A well drilling record is available that indicates the well was constructed prior to 1976 but after 1967, the year Act 368 was originally adopted as the standard for the construction of wells.
- 15 pts – A well drilling record is not available, the age of the well is unknown, or it is determined that the construction of the well precedes the 1967 inception of Act 368.

Casing Depth - The depth to which a well is cased is a factor in determining the amount of earth material available to provide for natural protection from potential contaminants. The SWAS_w is assessed a greater number of points as the casing depth is decreased in accordance with the following criteria:

- 0 pts – The well drilling record, or a physical determination of the casing depth, indicates the well is cased to a depth of 200 feet or greater.
- 5 pts – The well drilling record, or a physical determination of the casing depth, indicates the well is cased to a depth between 100 and 199 feet.
- 10 pts – The well drilling record, or a physical determination of the casing depth, indicates the well is cased to a depth between 25 and 99 feet.

15 pts – The well drilling record, or a physical determination of the casing depth, indicates the well is cased less than 25 feet, the casing terminates below grade, or the casing depth is not known.

Pumping Rate - The pumping rate has considerable impact on the “cone of depression” and “area of influence” of a well. The area of influence is greater at higher pumping rates, thereby, increasing the potential for contamination of a NTNCWS well. Accordingly, the $SWAS_w$ is assessed additional points based upon the following criteria for the pumping rate of the permanent pump:

0 pts – The well drilling record, or a physical determination of the pumping rate of the permanent pump, indicates the well is pumped at a rate of 20 gpm or less.

5 pts – The well drilling record, or a physical determination of the pumping rate of the permanent pump, indicates the well is pumped at a rate of 21 to 50 gpm.

10 pts – The well drilling record, or a physical determination of the pumping rate of the permanent pump, indicates the well is pumped at a rate of 51 to 100 gpm.

15 pts – The well drilling record, or a physical determination of the pumping rate of the permanent pump, indicates the well is pumped at a rate greater than 100 gpm.

WATER CHEMISTRY DATA - $SWAS_c$

Water chemistry data provides a refinement to the $SWAS$ through the $SWAS_c$, which may increase or decrease the $SWAS$. As examples, the presence of nitrates and nitrites, organic chemicals (volatile organic and synthetic organic), and inorganic chemicals (arsenic, cyanide, metals) are indicators of source water vulnerability and increase the $SWAS$. Review the most recent chemical monitoring records or more if appropriate.

Water chemistry data concentrations (including naturally occurring) in the well water shall result in the assignment of points to the $SWAS_c$ in accordance with the following:

0 pts – Not detected in the well water.

10 pts – Detected in the well water at a concentration that is less than one-half the MCL.

20 pts – Detected in the well water at a concentration that is less than the drinking water standard, but the concentration is one-half or more than one-half the MCL.

50 pts – Detected in the well water at a concentration that exceeds the MCL.

ISOLATION FROM SOURCES OF CONTAMINATION AND ISOLATION FROM STANDARD AND MAJOR SOURCES - $SWAS_s$

This evaluation occurs onsite. The isolation of a NTNCWS well from sources of contamination is an important criterion in the source water assessment. The maintenance and control of isolation distances can significantly reduce the risk associated with the use of a well. “Standard” sources of contamination include storm and sanitary sewers, septic tanks, drainfields, barnyards, or any surface water. “Major” sources of contamination include large scale waste disposal sites, land application of sanitary wastewater or sludges, sanitary landfills, and chemical or waste chemical storage or disposal facilities.

The $SWAS_s$ is assessed points for failure to have adequate isolation between “potential” sources of contamination and “known” sources of contamination. “Known” sources of contamination include sources where the groundwater has been impacted such as leaking underground storage tank or other sites of environmental contamination. Both Type IIB and IIA are assessed using the same isolation areas. The $SWAS_s$ is assessed points based upon isolation as follows:

10 pts – For each “potential” standard source of contamination within the standard isolation area (75 feet).

10 pts – For each “potential” major source of contamination outside the standard isolation area (75 feet) and within the SWPA.

20 pts – For each “potential” major source of potential contamination within the standard isolation area (75 feet).

25 pts – For each “known” source of contamination located within the SWPA.

A list of resources to view potential sources of contamination is available on the well construction program website at Michigan.gov/WaterWellConstruction.

Completed SWA Worksheets

Completed SWA Worksheets can be emailed to EGLE-EH@michigan.gov (preferred) or faxed to the Source Water Unit at 517-241-1328.

Request for Payment

EGLE will reimburse the LHD for each SWA completed. See the LHD contract regarding number of systems that can be reimbursed each Fiscal Year. LHDs will be reimbursed on a quarterly basis.

Questions

Please contact Travis Bauer at BauerT1@Michigan.gov or 517-242-4560, or Jason Berndt at BerndtJ1@Michigan.gov or 989-705-3420 if you have any questions.



SOURCE WATER PROTECTION GUIDE FOR NON-MUNICIPAL PUBLIC WATER SUPPLIES

Water Supply Name	_____	WSSN	_____
Water Supply Owner	_____	County	_____
Certified Operator	_____	Operator ID	_____
Well Record Available?	☐ Yes ☐ No	Date	_____

You are a Public Water Supply System

Source water assessments assigned a susceptibility rating to all public water supply systems. These ratings, designed to assess the potential for contamination of drinking water supplies, range from **low** to **very high**. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Purpose of this Guide

This guide is designed to help you, the owner of the public water supply, to evaluate the level of risk that existing well conditions or current practices pose to the water supply. This evaluation will give you an indication of the potential risks and suggestions for how to increase water supply protection through best management practices.

Answer the risk questions on the worksheets by selecting the statement that best describes conditions at your property. Indicate your risk level (low, medium or high) in the column to the right. Once you have completed all sections, you will list the practices that present medium or high risks to your water supply and develop a plan to reduce the risks. You are encouraged to work with your certified operator to complete this evaluation of your public water supply.

Background Information on SWAP

The 1996 amendments to the federal Safe Drinking Water Act required states to develop a Source Water Assessment Program (SWAP). SWAP was designed to identify areas that supply public drinking water, assess the susceptibility of those water supplies to contamination, and inform the public of the results.

Conducting source water assessments on each well provided a means to broadly characterize sources with respect to the relative risk of contamination. The assessments were intended to assist owners and regulatory agencies in making decisions affecting drinking water systems, future sampling, and groundwater protection efforts. SWAP was completed in 2004 and assessments were sent to all public water supplies.

Source Water Assessment Structure

The assessment process was structured to evaluate the degree of natural (geologic sensitivity) protection afforded by the permeability of overlying geologic material like sands, gravels, clays, silts, or rock. Other factors evaluated how the location has been affected by human activities. These factors included well attributes such as depth, grouting, age, pumping rate, historic water quality results, and proximity to various sources of potential contamination. Potential contamination sources can include septic systems, sewer lines, fuel storage tanks, groundwater contamination sites, floor drains, hazardous waste storage, fertilizer and pesticide storage and use, and storm water runoff. These human factors, combined with the geologic sensitivity, determined the overall susceptibility that was reported to each water supplier.

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SOURCE WATER PROTECTION GUIDE FOR NON-MUNICIPAL PUBLIC WATER SUPPLIES

Well Integrity and Management

(Note: Information can be gathered from the Source Water Assessment and/or the Well Record)

	Low Risk Recommended	Medium Risk Potential Hazard	High Risk Potential Unsafe Situation	Your Risk (Low, Med, High)
Permeability of top layer of soil	Clay (very tiny particles).	Silt/loam (midsize particles).	Sand/gravel (large particles).	
Thickness of soil protective layer	10 feet or more of continuous clay.	10 feet or more of clay-sand or clay-silt mix	Less than 10 feet of confining material.	
Bedrock	Solid, not permeable or fractured.	Solid limestone or sandstone, or fractured granite or shale.	Fractured limestone or sandstone.	
Bedrock and Casing	Bedrock surface is greater than 40 feet below ground surface and/or casing penetrates at least 50 feet into the rock.	Bedrock is less than 40 feet below surface and casing penetrates to at least 50 feet below ground surface.	Bedrock is less than 40 feet below ground surface and casing penetrates less than 50 feet below ground surface.	
Static Water Level	Over 40 feet.	10 to 40 feet.	Less than 10 feet.	
Age of the Well	Constructed after 1994.	Constructed between 1976 and 1994.	Constructed prior to 1976.	
Well Grouting	Drilled and grouted with neat cement or bentonite.	Partially or poorly grouted.	Drilled and not grouted or driven point.	
Condition of the well casing and cap	No holes or cracks. Approved cap tightly secured. Screened vent.	Unapproved cap tightly secured. Screened vent.	Holes or cracks visible. Cap loose or missing.	
Protection of well casing	No chemicals are applied near well casing. No downspouts drain on top of well casing. Ground landscaping slopes away from the well casing in all directions.	No chemicals are applied near well casing. Downspouts drain on top of well casing.	Chemicals are applied near well casing. Downspouts drain on top of well casing.	
Depth of the well casing	More than 100 feet, or minimum of 60 feet with 10 feet of clay or 20 feet of clay mixture (confining material).	At least 25 feet, but non confining material.	Less than 25 feet or no casing.	
Casing height above grade	12 inches or more.	From grade level to less than 12 inches.	Below grade, in a pit, or in a basement not in a basement offset.	
Surveillance of wellhead	Wellhead is readily visible for inspection and is protected with barrier from vehicular damage (snowplows, lawn mowers, cars, etc.).	Wellhead is readily visible for inspection but is not protected with barrier from vehicular damage (snowplows, lawn mowers, cars, etc.).	Wellhead is not readily visible for inspection and is not protected with barrier from vehicular damage (snowplows, lawnmowers, cars, etc.).	
Inspected by a registered well driller or pump installer	Within the past 10 years.	Between 10 and 20 years ago.	More than 20 years ago, or don't know when the well was last inspected.	

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SOURCE WATER PROTECTION GUIDE **FOR NON-MUNICIPAL PUBLIC WATER SUPPLIES**

Wastewater Management (Onsite Disposal)

Wastewater from sinks and toilets carry dirt, soap, food, grease and bodily wastes out of your buildings. The hazardous chemicals, disease-causing microbes (pathogens) and nutrients such as phosphorus, nitrates and organic wastes found in wastewater can lead to human illness and unsafe water. Wastewater must be treated before these contaminants reach groundwater in order to better protect your site's drinking water.

	Low Risk Recommended	Medium Risk Potential Hazard	High Risk Potential Unsafe Situation	Your Risk (Low, Med, High)
Septic system size	Tank and drain field designed to handle more wastewater than required.	Capacity just meets wastewater requirements.	Design capacity is much less than potential flow of wastewater.	
Age of septic system	Less than 5 years old.	5 to 20 years old.	More than 20 years old.	
Distance that separates the septic tank, drainfield, sanitary sewers and storm drains from water wells	Outside the SWPA.	Within the SWPA.	Less than 200 feet (Type I systems) or less than 75 feet (Type II systems) from well.	
The septic tank was pumped:	Within the past 5 years.	6 to 10 years ago.	More than 10 years ago.	
Signs of trouble with the septic system	Drains flow normally, no sewage odors inside or outside, soil over drainfield firm and dry.	Drains run slowly or soil over drainfield is sometimes wet.	Sewage odors in the facility or near the drainfield, drains plugged or back up, soil wet or spongy in drainfield area.	
Records maintained on septic system	Good site plan and records of system repairs and maintenance are kept.	Some records maintained.	No site plan or maintenance records kept.	
Cleaners, solvents and other chemicals poured down the drain.	Moderate use of cleaning products discharged with wastewater. Hazardous chemicals never poured down drain or toilet.	Moderate use of cleaning products. Very small amounts of hazardous chemicals poured down drain or toilet.	Heavy use of cleaning products. Hazardous chemicals discharged in wastewater.	
Grease traps	Effective grease traps are in place ahead of septic tanks and the waste is properly disposed.	Effective grease traps are in place ahead of septic tanks and the waste is not properly disposed.	Effective grease traps are not in place ahead of septic tanks and the waste is not properly disposed.	
Chemical or sewage lagoons	Outside the SWPA.	Within the SWPA.	Less than 2000 feet from well (Type I systems) or less than 800 feet from the well (Type II systems)	
Feed lots	Outside the SWPA	Within the SWPA.	Less than 2000 feet from well (Type I systems) or less than 800 feet from the well (Type II systems)	
Ownership and/or control of SWPA	Own or lease entire area.	Own or lease greater than half of the area.	Own or lease less than half the area.	

SOURCE WATER PROTECTION GUIDE FOR NON-MUNICIPAL PUBLIC WATER SUPPLIES

Managing Hazardous Products

Pesticides and herbicides are hazardous products that pose minimal risks if properly used. However, if they are over-applied or applied too closely to a well, they have greater potential to contaminate your drinking water. Fuel stored in large tanks poses a greater risk of contamination than the small quantities stored for power equipment.

	Low Risk Recommended	Medium Risk Potential Hazard	High Risk Potential Unsafe Situation	Your Risk (Low, Med, High)
Pesticides, fertilizers, cleaning agents, and fuel – Storage	No products are stored on site Fuel is not stored on site. Storage on site is 2000 feet or more (Type I systems) or 800 feet or more (Type II systems) from the well and outside the Provisional SWPA.	Products are stored on an impermeable floor with no floor drain. Aboveground fuel stored in secondary containment area or underground fuel is stored in a double walled tank and the tank is 200-2000 feet (Type I systems) or 75-800 feet (Type II systems) from the well or further than 800 or 2000 feet away but within the Provisional SWPA.	Products are stored in a room with a floor drain. Aboveground fuel is stored in a tank with no secondary containment. Underground fuel is stored in a tank that is not double walled, tank type is unknown or tank is less than 200 feet (Type I systems) or 75 feet (Type II systems) from the well.	
Pesticides, fertilizers, cleaning agents and fuel – Use	Pesticides and Fertilizer not applied or applied based on soil tests and objectives. Cleaning Products purchased as needed, or stored in air-tight, leak proof containers. Fuel spills have never occurred.	Fertilizer applied before spring green-up. Pesticide is applied away from well and containers cleaned away from well. Cleaning Products purchased as needed, or stored in air-tight, leak proof containers. Fuel spills are cleaned up if they occur.	Pesticides and Fertilizer are applied over discriminate area and simply based on scheduled applications. Cleaning Products are stored in large stock in improper containers. Fuel spills are not cleaned up if they occur.	
Pesticides, fertilizers, cleaning agents and fuel – Disposal	All products are used completely or removed immediately to a hazardous waste disposal facility.	Waste products are stored on-site and disposed in a landfill away from water wells.	Products are disposed of near a well, in surface water or poured down a drain.	
Fuel Oil for heating storage tanks, generator fuel tanks	In an approved tank located in an area without a floor drain.	Located outside and above-ground with secondary containment around the tank, valve, and fill pipe, and with a protective covering over the regulator and/or valve.	Located outside, above-ground, and without secondary containment. Or, located under the edge of the roof eave without a protective cover over the regulator and/or valve.	

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SOURCE WATER PROTECTION GUIDE FOR NON-MUNICIPAL PUBLIC WATER SUPPLIES

Storm Water Runoff Management

Storm water runoff is water from rain or melting snow that does not soak into the ground. This water collects and transports soil, pet waste, salt, pesticides, fertilizer, oil and grease, yard wastes, litter and other potential pollutants as it flows over the surface of the land. Water from storm drains is not treated by water treatment plants. Polluted storm water degrades Michigan's drinking water, lakes, rivers and wetlands. Groundwater and surface water are interconnected.

	Low Risk Recommended	Medium Risk Potential Hazard	High Risk Potential Unsafe Situation	Your Risk (Low, Med, High)
Car washing wastes, automotive wastes, and grass clippings, leaves and other yard waste.	None or little waste is produced on site (vehicles taken to a commercial car wash, oil drips and spills cleaned up and kept out of storm water, yard wastes left on lawn or composted).	Some waste is produced on site (vehicles washed on a lawn or gravel drive, oil drips and spills not cleaned up right away, yard wastes piled on site for street collection).	A great deal of waste is produced on site (vehicles washed on driveways, streets or other paved areas, oil, antifreeze and other wastes dumped down the storm sewer, in ditch or on the ground, yard wastes left in paved surface to be carried off by storm water or burned on paved surface or in a ditch).	
Paved surfaces	Paved surfaces minimized. Alternatives such as wood chips or paving blocks used for walkways, patios and other areas. Very small amount of wastes run off site or toward wellhead.	Some small areas paved promoting some wastes running off from surfaces toward wellhead.	Paved surfaces used extensively and a great amount of wastes run off to surface waters or well.	
Roof drainage	Downspouts and drip lines direct roof drainage onto lawn or garden where water soaks into the ground away from well.	Some downspouts and drip lines discharge water onto paved surfaces or grassy areas where water runs off away from well.	Most or all drip lines or downspouts flow onto paved surfaces. Or downspouts connect directly to storm drains or areas near well.	
Landscaping and buffer strips	Yard landscaped to slow storm water flow and provide areas where water soaks into the ground away from well. Unmowed vegetation buffer strips along streams or lakeshores.	No areas landscaped to encourage water to soak in, but yard is relatively flat and little runoff occurs toward wellhead. Mowed grass or spotty vegetation adjacent to stream or lake.	No landscaping to slow the flow of storm water to wellhead or surface waters, especially on hilly or easily eroded properties.	
Distance from surface water	Well is located 200 feet or greater (Type I systems) or 75 feet or greater (Type II systems) from surface water.	Well is located less than 200 feet (Type I systems) or less than 75 feet (Type II systems) from surface water, but has at least 10 feet of protective clay layer.	Well is located less than 200 feet (Type I systems) or less than 75 feet (Type II systems) from surface water, but with no protective clay layer.	

SOURCE WATER PROTECTION GUIDE FOR NON-MUNICIPAL PUBLIC WATER SUPPLIES

Managing Site Waste

The amount, type and location of wastes generated on-site can have an effect on the quality of your drinking water. Composting, storing or dumping up-gradient from your well exposes your groundwater to potential pollutants. Pollutants that run off the dump/compost site directly toward your well can lead to contamination of both groundwater and surface water.

	Low Risk Recommended	Medium Risk Potential Hazard	High Risk Potential Unsafe Situation	Your Risk (Low, Med, High)
Waste disposal	Only organic wastes (leaves, grass clippings, food, wood chips, etc.) are disposed of on site. Waste (including compost) is stored down- gradient while waiting for removal/use.	Trash and liquids, appliances, tires and other junk are stored on site for eventual removal. Waste (including compost) is stored on site while waiting for removal/use.	Trash and liquids, appliances, tires and other junk are discarded on site. Hazardous and other wastes are improperly discarded to land surface, sewer system, septic system or storm drains. Waste (including compost) is stored up gradient while waiting for removal/use.	
Waste Liquids	Kept in secure containers in an area with secondary containment for proper disposal at an off-site location.	Stored in nonsecure containers and/or in an area without secondary containment for proper off-site disposal.	Improperly disposed of at an on-site location.	
Other Issues				

Action Checklists

Go back to the assessment charts in this worksheet. For each medium and high risk, write down the improvements you plan to make. Use recommendations from this worksheet and other resources to choose actions you are likely to complete. A target date will keep you on schedule. You don't have to do everything at once, but try to eliminate the most serious risks as soon as you can. Often it helps to tackle the inexpensive actions first.

Write all high and medium risks in this column:	What can you do to reduce the risk?	Target date for action:

Signature of Owner (or Operator if delegated by Owner):

The information in this guide was adapted with permission from the Farm*A*Syst Farmstead Assessment system developed by Michigan State University Extension, FAS 107

Please send a copy of this completed form to:
EGLE - Drinking Water and Environmental Health Division
Source Water Unit
P.O. Box 30817
Lansing, Michigan 48909-8311
Email EGLE-EH@Michigan.gov
Phone 517-284-6530
Fax 517-241-1328

Chapter 5 Appendices

Construction Permit Process and Source Water Assessments

Documents	Number of Pages
E01 Fixture Count Method for Calculating Peak Demand Worksheet.....	1
E01.1 Fixture Method for Calculating Peak Demand Worksheet	2
E01.2 Residential Unit Method for Calculating Peak Demand Worksheet	1
E02 Instructions for Completing a Permit Application	1
E03 Application and Permit to Install (EQP 2024)	2
E04 Peak Demand Calculation (Excel Workbook).....	2
E05 Capacity Development Plan	6
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E06 Permit Alteration Letter	1
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FIXTURE COUNT METHOD
For Calculating Peak Demand

Facility Name _____ Date _____
Well Permit # _____ WSSN _____

1. Total Fixtures from below = _____

Toilet _____	Bathtub/shower _____
Urinal _____	Water softener _____
Lavatory _____	Wash machine _____
Kitchen sink _____	Hose bibb/hydrant _____
Garbage disposal _____	Automatic dishwasher _____
Service/Mop sink _____	Other _____
Drinking fountain _____	Other _____
Food equipment _____	Other _____

2. Peak Demand in Gallons Per Minute (GPM) Per Fixture = _____ GPM

Type of Building	Total Number of Fixtures							
	25 or less	26-50	51-75	76-100	101-200	201-400	401-500	Over 500
Hospitals	1.00	1.00	0.80	0.70	0.60	0.50	0.45	0.40
Churches Halls Theaters	1.50	1.25	1.00	0.80	0.75	0.70	0.60	0.50
Mercantile Buildings	1.30	1.00	0.80	0.75	0.70	0.60	0.055	0.50
Office Buildings	1.20	0.90	0.75	0.70	0.65	0.50	0.40	0.35
Factories Warehouses	1.25	1.00	0.80	0.75	0.70	0.60	0.55	0.50
Schools	1.20	0.85	0.70	0.65	0.60	0.55	0.45	0.45
Motels Hotels	0.80	0.65	0.55	0.50	0.45	0.40	0.35	0.30
Apartment Buildings	0.60	0.55	0.50	0.40	0.35	0.30	0.25	0.20

Note: For buildings with less than 25 fixtures, the pump capacity should be a minimum of 10 gpm. Where laundries or swimming pools are to be supplied, an additional 10% should be added to the pump capacity. Where additional water is required for heating, cooling, or other special processes, the water usage should be added to the pump capacity.

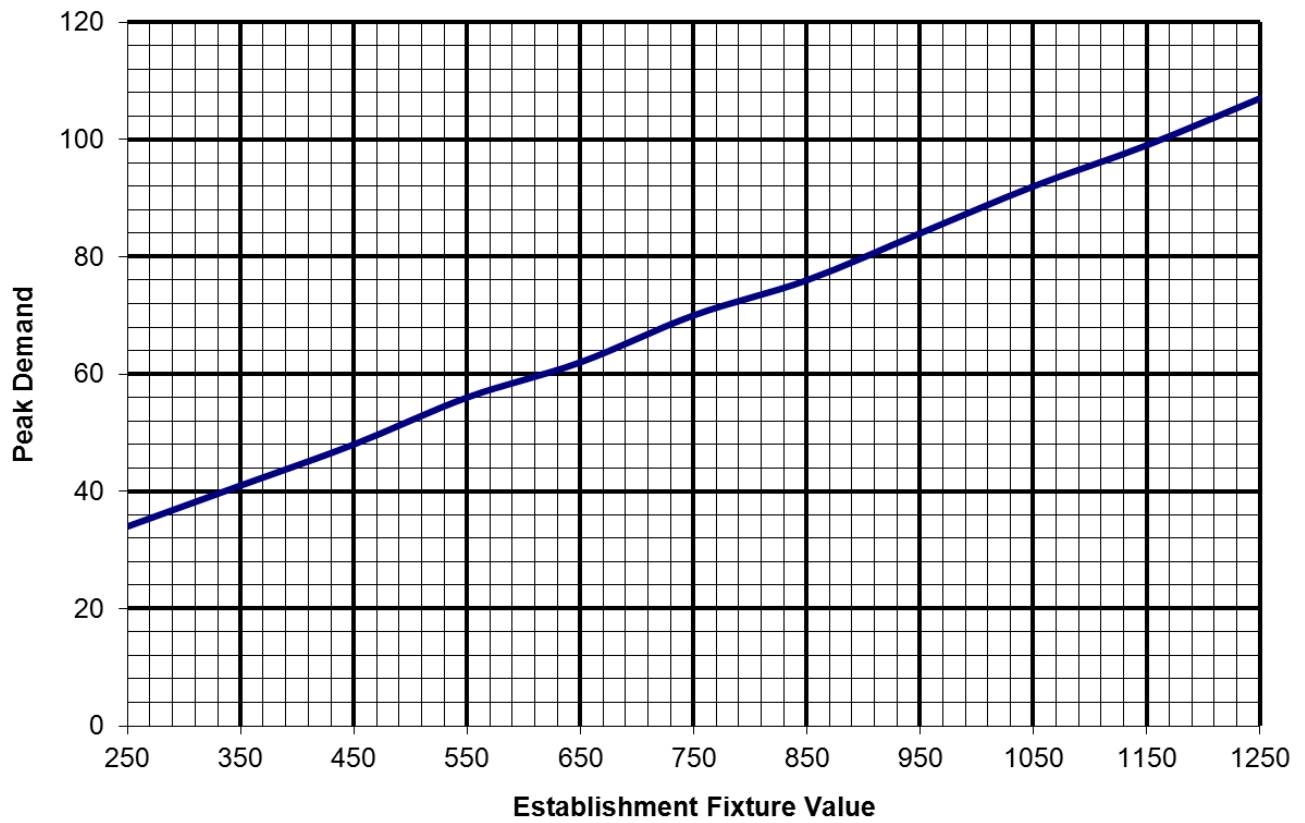
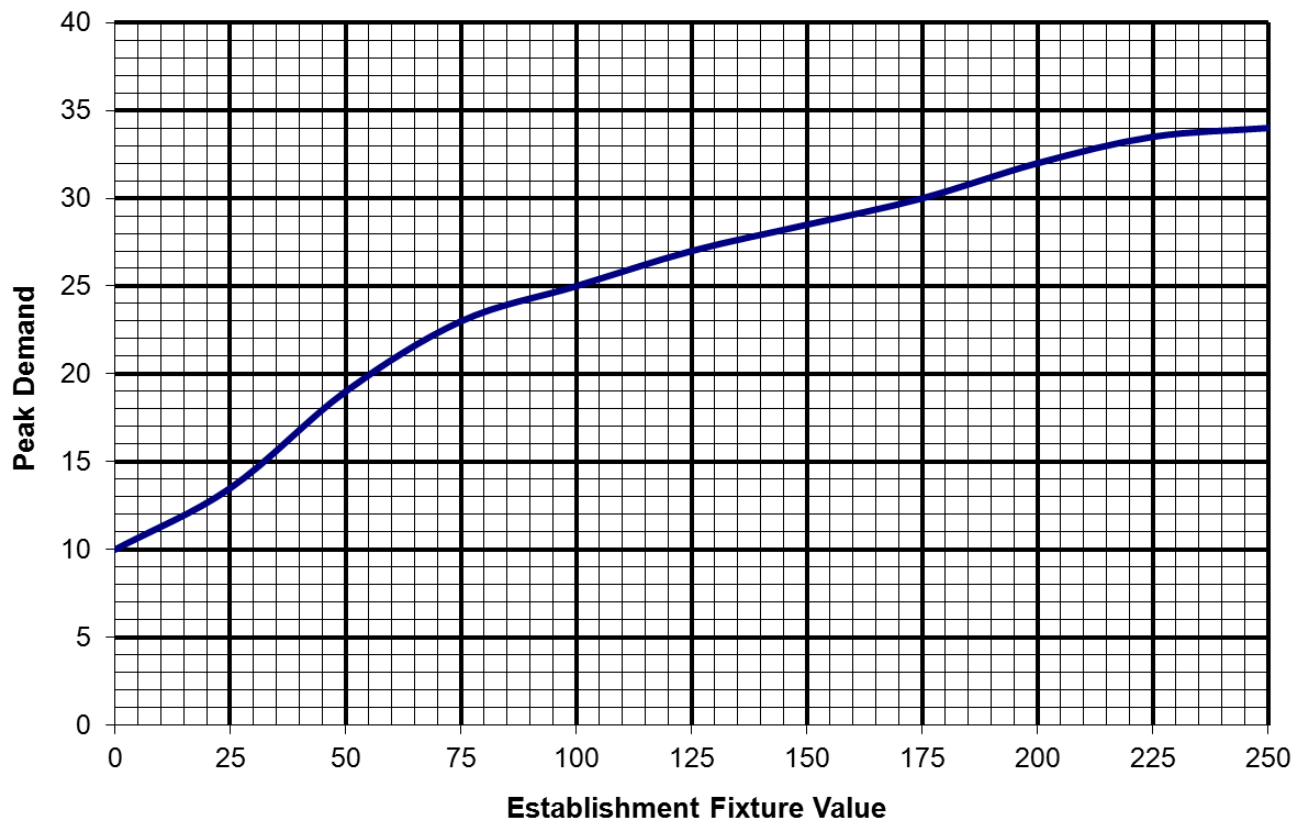
1. Total fixtures _____ X 2. GPM per fixture _____ = _____ GPM Peak Rate

FIXTURE METHOD
For Calculating Peak Demand

Facility Name _____ Date _____

Well Permit # _____ WSSN _____

Fixture Type	Fixture Value		Number of Fixtures	Total
Water Closet, with tank	5	X		
Water Closet, with flush valve	27	X		
Urinal, with tank	4	X		
Urinal, with flush valve	15	X		
Combination fixture	4	X		
Lavatory	2	X		
Bathtub, or tub/shower combination	4	X		
Bidet	2	X		
Shower	3	X		
Drinking fountain	0.75	X		
Hose bibb or yard hydrant, ½" @ connection	3	X		
5/8" connection	5	X		
¾" connection	10	X		
Washing machine, ½" connection	3	X		
5/8" connection	5	X		
¾" connection	10	X		
Laundry tray	4	X		
Lawn sprinkler, per sprinkler head	5	X		
Auto washing, hand spray type	5	X		
Tractor and equipment washing	5	X		
Water softener regeneration	7	X		
Dental unit	1	X		
Dental lavatory	2	X		
Garbage disposal, domestic	3	X		
Commercial	5	X		
Kitchen sink, small	6	X		
Large	8	X		
Spray rinse, hand operated	4	X		
Ice machine	2	X		
Ice cream machine	2	X		
Ice cream dipper well	2	X		
Glass filling unit	2	X		
Hot chocolate unit	0.5	X		
Coffee urn	0.5	X		
Dishwasher, residential	2.75	X		
Other				
Establishment Fixture Value				



Using establishment fixture value and graph, GPM Peak Rate = _____ GPM

Note: Irrigation, process water, and automatic dishwasher needs to be added to the GPM Peak Rate.

RESIDENTIAL UNIT METHOD

For Calculating Peak Demand

Facility Name _____ Date _____

Well Permit # _____ WSSN _____

Type of Establishment	GPD/Person
Airports (per passenger)	5
Bathhouses and swimming pools	10
Camps: Campgrounds	Sized per Campground Rules
Construction camps (semi-permanent)	50
Day camps (no meals served)	16
Resort camps (night and day) with limited plumbing	50
Luxury camps	100
Church (per auditorium seat)	5
Church (with substantial kitchen wastes, per auditorium seat)	7-10
Cottages and small dwellings with seasonal occupancy	50
Country clubs (per resident member)	100
Country clubs (per non-resident member present)	25
Dwellings	
Boarding houses	50
additional for non-resident boarders	10
Luxury residences and estates	150
Multiple family dwellings (apartments)	80
Rooming houses	40
Single family dwellings	75
Factories (gallons per person, per shift, exclusive of industrial wastes)	35
Hospitals (per bed space)	250
Hotels with private baths (2 persons per room)	60
Hotels without private baths	50
Institutions other than hospitals (per bed space)	125
Laundries, self-service (gallons per wash, i.e., per customer)	50
Mobile home parks (per space)	200
Motels with bath, toilet, and kitchen wastes (per bed space)	50
Motels (per bed space)	40
Picnic parks (toilet wastes only) (per picnicker)	5
Picnic parks with bathhouses, showers, and flush toilets	10
Schools	
Boarding	100
Day, without gyms, cafeterias, or showers	15
Day, with gyms, cafeteria, and showers	25
Day, with cafeteria, but without gyms or showers	20
Service stations (per vehicle served)	10
Swimming pools and bathhouses	10
Theaters: Movie (per auditorium seat)	5
Drive-in (per car space)	5
Workers	
Construction (at semi-permanent camps)	50
Day, at schools and offices (per shift)	15

Estimated peak demand flow for schools, motels, office buildings, churches, apartment complexes, and similar type buildings can be determined using data from similar systems of comparable size and usage. Where the total gallons per day (gpd) water usage can be estimated, the peak demand gpm can be determined using a basic formula derived from studies of water use patterns for residential customers. If actual data from similar buildings is not available, an estimate of daily water usage for various establishment types can be obtained from the previous table. A residential unit (N) is equivalent to 350 gpd. The flow rate in gpm is equivalent to 10 times the square root of the number of N units served. If the peak demand is less than 10 gpm, 10 gpm should be used as the minimum pump capacity.

Total Daily Flow:

_____ Workers X _____ GPD X _____ Shift = _____ GPD ÷ 350 GPD = _____ N units

10 X $\sqrt{\text{_____ N units}}$ = _____ GPM Peak Rate

EXAMPLE LETTER

LHD: Remove or add information as needed.

Instructions for Completing a Noncommunity Water Supply Permit Application

1. Completely fill out the Michigan Department of Environment, Great Lakes, and Energy's "Application to Install or Alter a Public Water Supply System".
2. Complete the "Fixture Count Worksheet" as completely as possible. If the manufacturer's information is not available, an estimate will be used.
3. Contact the Noncommunity Water Supply Coordinator, Name at phone to make an appointment for a site evaluation.
4. Submit the application, including fixture count and scale drawing, and \$ permit fee to:

Payment can be made with cash, check (payable to), or credit card.

The Environmental Health Staff will conduct a site inspection to review the proposed well location prior to drilling. Water sampling requirements will be determined during the site inspection and application review.

Please call for a final inspection and collection of water samples when the well is completed.

Final approval of the well will not be granted until the local health department has: 1. Approved the well construction and pump installation, 2. Received satisfactory water sample results, and 3. Received a satisfactory Water Well and Pump Record from the well contractor(s).

A permit issued under the Safe Drinking Water Act will expire within 2 years of issuance unless construction or alteration commences.



**APPLICATION TO INSTALL OR ALTER
A PUBLIC WATER SUPPLY SYSTEM**

Completion is required under the authority of Part 13, 1976 PA 399.

Type of Permit Request

- ☐ New well and water supply
☐ Replacement well only
☐ Alteration of an existing public water supply (distribution system)
☐ Conversion from existing operation to new use

Establishment Details

Name: _____

Address: _____

County: _____

Township: _____ Section: _____

WSSN: _____ Tax ID: _____

Dates of Operation of the Water System: Year-round ☐ Yes ☐ No, from _____ to _____

Drain all or a portion of the system: ☐ Yes ☐ No

Number of Service Connections (Buildings): _____

Proposed or existing use (Restaurant, Campground, School, Church, etc.): _____

License(s) if applicable (Food, Campground, Childcare, etc.): _____

Wastewater System: ☐ Onsite Disposal (private) ☐ Sanitary Sewer (community)

Owner Details

Owner Name: _____

Mailing Address: _____

Email Address: _____

Phone Number: _____

Operator Details

Nontransient systems and systems with regulated treatment

Certified Operator Name: _____

Operator Number: _____

Email Address: _____

Phone Number: _____

Population

Number of Full Time Employees: _____ Number of Part Time Employees: _____

Number of Students (Schools): _____ Number of Children (Licensed Daycare): _____

Average Number of Non-Employees (Guests) Served Per Day: _____

If the facility is not open every day, use the total of 30 busiest days and divide by 30.

Number of Residents _____

Water Treatment

(e.g., Softener, In-line Filter, Contaminant Removal)

An additional treatment permit may be necessary once the treatment scope is reviewed.

Is there proposed or existing water treatment? ☐ Yes ☐ No

Describe all treatment devices and their purpose(s) :

Well Installations (if applicable)

Registered Well Contractor Company Name: _____

Phone Number: _____

After well construction is completed, a water well and pump record must be submitted and approved, the local health department is to be notified for final inspection, and applicable sampling of the well and water supply system is to be completed. Approval from the local health department is required prior to placing water supply well into service.

Project Description

Provide a detailed description of the project. Provide product information if you are installing any fixtures, treatment devices, filters, etc. All products must meet NSF/ANSI 60 and 61 to be approved for use in a public water supply system. Use additional sheets as necessary.

(Examples: Remodel project will include replacing all current plumbing fixtures. Replacing pressure tanks. Replacing water softener.)

☐ Complete the Fixture Count Worksheet

Method(s) used to calculate peak demand: _____

Estimated peak demand (gallons per minute): _____

The applicant may have like-sized facilities where water usage is known, e.g., chain of fast-food restaurants. In those cases, the system sizing could be based upon the known water usage and pumping capacity. If used to estimate peak demand, submit documentation of water usage at the like-sized facility with this application.

☐ If the manufacturer's rated pump capacity is or will be greater than 70 gallons per minute, completion of the Michigan's Water Withdrawal Assessment Tool (WWAT) is required. The WWAT is available at the following link [Water Withdrawal Assessment Tool](http://www.EGLE.State.MI.US/WWAT) (<http://www.EGLE.State.MI.US/WWAT>).

Drawing

Describe the type of drawing submitted (engineered plans, scale drawings, etc.). If engineered plans are available, submit a full set of project plans with this application.

Type of Drawing:
(hand, scaled,
engineered) _____

If Applicable:

Professional Engineer
or Consultant Name: _____

Email Address: _____

Phone Number: _____

If engineered plans are not available, submit a scale drawing on an 8.5" x 11" paper or larger. The drawing must minimally include:

1. North arrow
2. Property lines and dimensions
3. Streets or roads and driveways
4. Existing and proposed buildings – include distance to roads and landmarks
 - a. Indicate proposed additions or changes to existing buildings for remodeling.
 - b. Attach existing and proposed floor plan for remodeling.
5. Well locations – (proposed and/or existing) with distance to wastewater discharge system shown
6. Wastewater discharge system components – proposed and/or existing
7. Neighboring wastewater discharge systems (within 300 feet)
8. Sanitary and storm sewers
9. Surface water, e.g., lakes, streams, ponds
10. Underground and above ground fuel storage tanks
11. Utilities, e.g., electric (above and below ground), natural gas, propane, phone

Certification

I hereby apply for this permit and have authorization to do so. I understand this is a construction permit only and that the well and/or water system is not to be put into service until approval has been granted by the local health department. I further state the information given is accurate and complete.

Applicant Name: _____

Mailing Address: _____

Email Address: _____

Phone Number: _____

Date: _____

Applicant's Signature: _____

Applicant's Title/Position: _____

Fixture Count Worksheet

Please fill in the quantity for each of the following fixtures:

_____ Toilet with tank	_____ Ice machine
_____ Toilet with flush valve	_____ Ice cream machine
_____ Urinal with tank	_____ Ice cream dipper well
_____ Urinal with flush valve	_____ Glass filling unit
_____ Bathroom sink	_____ Hot chocolate unit
_____ Bathtub or tub/shower combination	_____ Coffee unit/urn
_____ Shower	_____ Groundwater heat pump ¹
_____ Drinking fountain	_____ Air conditioner (water cooled) ¹
_____ Laundry tub	_____ Evaporative cooler ¹
_____ Service or Mop sink	_____ Bulk chemical dispensing unit ¹
_____ Lawn sprinkler per sprinkler head ¹	_____ Boiler unit/steam heating unit ¹
_____ Auto washing, hand spray type	_____ Washing machine
_____ Tractor and equipment washing	_____ 1/2" connection
_____ Water softener	_____ 5/8" connection
_____ Dental unit	_____ 3/4" connection
_____ Dental lavatory	_____ Hose bibb or Yard hydrant ²
_____ Garbage disposal – domestic/household	_____ 1/2" connection
_____ Garbage disposal – commercial	_____ 5/8" connection
_____ Kitchen sink – small	_____ 3/4" connection
_____ Kitchen sink – large/double/triple	_____ Other (describe)
_____ Automatic dishwasher ¹	_____
_____ Spray rinse, hand operated	_____

¹Please include manufacturer specifications for water demand (gpm) required per fixture, if available.

²Yard hydrants must be on the EGLE approved list (no open weep hole into the ground).

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

Name

Date

Michigan Department of Environmental Quality
Determining Peak Demand
Fixture Count Method

Fixture	Count
Toilets	
Urinals	
Lavatories	
Kitchen Sinks	
Service Sinks	
Garbage Disposal	
Hose Bibs	
Drinking Fountains	
Food Equipment	
Bathtub	
Shower	
Other	

Total fixtures 0

Gallons per minute per fixture See table below

Total Gallons per minute 0

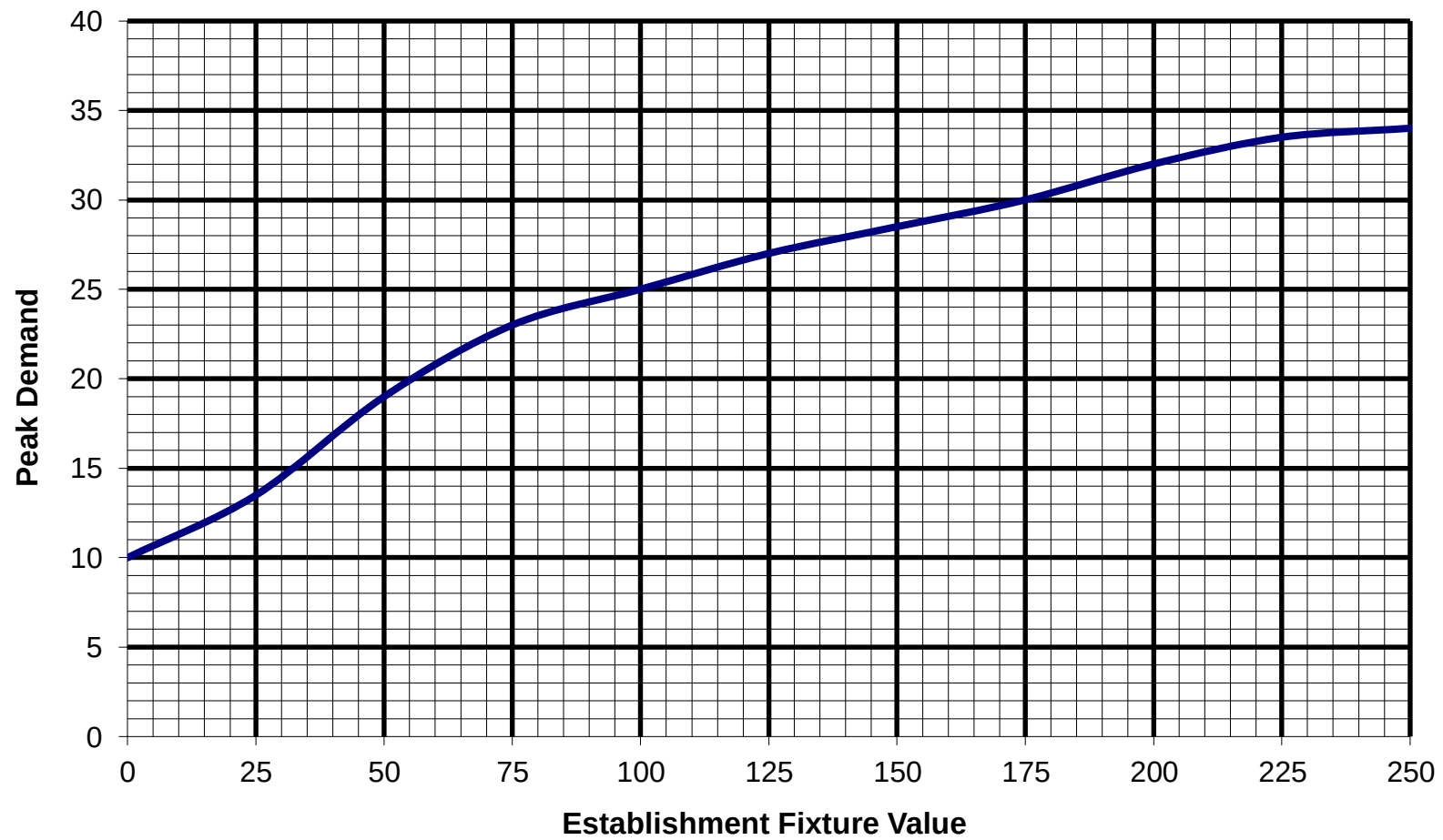
Type of Building	25 or less	26-50	51-75	76-100	101-200	201-400
Hospital	1.00	1.00	0.80	0.70	0.60	0.50
Church	1.50	1.25	1.00	0.80	0.75	0.70
Hall	1.50	1.25	1.00	0.80	0.75	0.70
Theater	1.50	1.25	1.00	0.80	0.75	0.70
Mercantile Building	1.30	1.00	0.80	0.75	0.70	0.60
Office Building	1.20	0.90	0.75	0.70	0.65	0.50
Factory	1.25	1.00	0.80	0.75	0.70	0.60
Warehouse	1.25	1.00	0.80	0.75	0.70	0.60
Schools	1.20	0.85	0.70	0.65	0.60	0.55
Motel or Hotel	0.80	0.65	0.55	0.50	0.45	0.40
Apartment Building	0.60	0.55	0.50	0.40	0.35	0.30

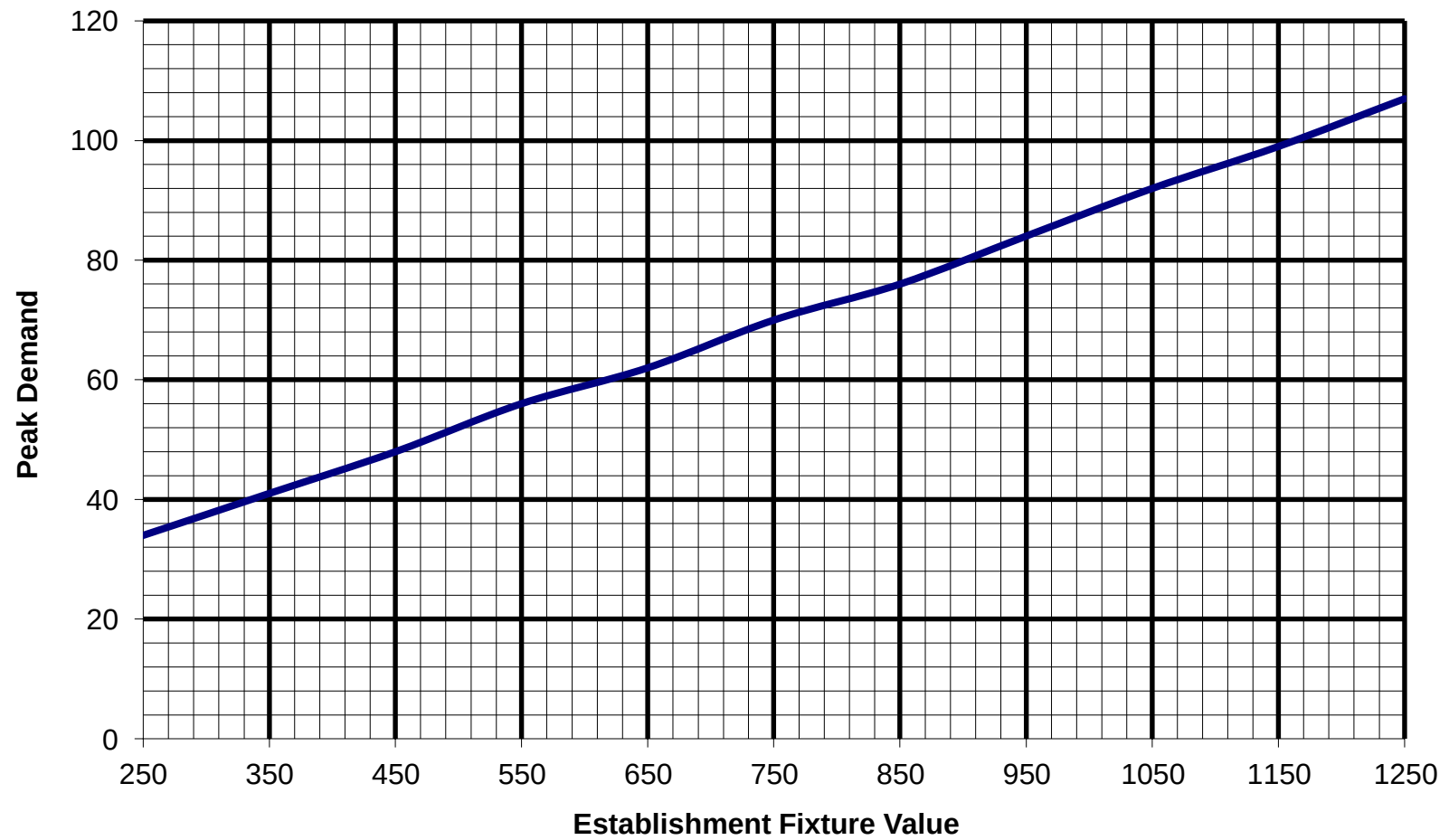
Name

Date

Michigan Department of Environmental Quality
Determining Peak Demand
Fixture Method

Fixture Type	Number of fixtures	Fixture Value	Total
Water closet, with tank		5	0
Water closet with flush valve		27	0
Urinal with tank		4	0
Urinal with flush valve		15	0
Lavatory		3	0
Bathtub or tub/shower		10	0
Shower		6	0
Drinking fountain		2	0
Hose bib with 1/2" connection		3	0
Hose bib with 5/8" connection		5	0
Hose bib with 3/4" connection		10	0
Washing machine with 1/2" connection		3	0
Washing machine with 5/8" connection		5	0
Washing machine with 3/4" connection		10	0
Laundry tray		8	0
Auto washer (hand sprayer)		5	0
Tractor & equipment washing		5	0
Water softener		7	0
Dental unit		1	0
Dental lavatory		2	0
Garbage disposal domestic		3	0
Garbage disposal commercial		5	0
Kitchen sink small		6	0
Kitchen sink large		8	0
Spray rinse		4	0
Ice machine		2	0
Ice cream machine		2	0
Ice cream dipperwell		2	0
Glass filling unit		2	0
Hot chocolate unit		0.5	0
Coffee urn		0.5	0
Other			
Total fixture value	0		0
GPM from Graph			
Other	Number of heads	GPM / head	Total GPM
Irrigation			0
Process Water			0
Automatic dishwasher			0
Total GPM			0





Nontransient Noncommunity Water Supply Capacity Development Plan

Under Michigan Rule, 325.1004, Sec. 4. (2) (4), 325.1008, Sec. 8 and 325.1015, Sec 15. (2), this form must accompany construction plans submitted for all **new nontransient noncommunity public water supplies**, and existing transient supplies applying to become a nontransient water supply.

Technical Plan:

New nontransient noncommunity public water supplies shall complete an "Application and Permit to Install Water Supply Facilities" from Department of Environment, Great Lakes, and Energy (EGLE) or an authorized local health department. The completed application must include plans and specifications for the new waterworks system.

An existing transient water supply that will become a nontransient water supply shall provide plans and specifications of the waterworks system. The information must include a site plan showing the existing well location isolation from buildings, property boundaries, potential sources of contamination, etc., and all available information regarding the well, e.g., Water Well and Pump Record. A sanitary survey must be completed by the local health department to assess the status of compliance of the water supply prior to approval for use as a nontransient noncommunity water supply.

Managerial Plan:

For all nontransient noncommunity water supplies, the owner is required to identify an operator responsible for the water supply. Operator certification and nine hours of continuing education training every three years is required. Identify the person who is or will be the certified operator for the nontransient water supply, including their signature and date.

Operator Name _____
Street Address _____
City, State, Zip Code _____
Telephone _____
Water Supply Serial
Number (WSSN) _____

Operator Signature _____ Date _____

Retention of records:

Bacteria sample results 5 years
Chemical sample results 10 years
Public notifications 3 years
Documentation of corrective actions 10 years

Financial Plan:

A Financial Plan Worksheet (Worksheet 2) is included in this document to help identify relevant costs and sources of information.

Provide cost analysis/estimates for the following (from the worksheet):

Estimated cost for construction of new nontransient noncommunity water
supply system _____

Is connection to a community water supply system available? _____

If connection to community water is available, provide the cost for
connecting to the community system _____

Annual EGLE Water Supply Fee _____

Annual operator certification and training _____

Annual operation and maintenance for utilities, treatment, etc.

Annual sample collection and laboratory analysis

Emergency repairs and contingency plan funds

By signing this document, I certify that I have assessed the actual and potential costs and responsibilities of operating a noncommunity water supply and have the ability to acquire and manage sufficient resources to maintain the technical, managerial and financial capacity of the water system as it relates to the requirements of the Safe Drinking Water Act. I am the supply owner, manager, chief financial officer, or chief executive officer.

Signature _____ Name (print) _____

Title _____ Date _____

Emergency Response Plan:

An emergency response plan for an appropriate response to temporary loss of normal water service is required as part of the managerial capacity assessment. The attached Worksheet 1 is to be completed and submitted with the rest of this application.

For LHD use	Reviewer	Date of Review
Technical Capacity Plan		
Managerial Capacity Plan		
Financial Capacity Plan		
Emergency Response Plan		

Worksheet 1
Emergency Response Plan for Drinking Water Emergencies
Noncommunity Public Water Supplies

Water Supply Name _____

Water Supply Serial
Number (WSSN) _____

Source IDs _____

Emergency Response Plan Purpose: In the event of an emergency pertaining to the drinking water supply, it is necessary to act promptly and effectively to protect public health and welfare. In the context of this plan, emergencies could include complete loss of water pressure, contamination of water supply, and threats or observed vandalism to water supply. Complete loss of water normally would require closure of the facility. Threats or contamination with unknown substances may also warrant such action. However, under certain situations where water is flowing but has been determined unsafe to drink by health authorities, it may be possible to operate the facility with approval of the appropriate local or state agencies. If approved, operation for an interim period is dependent on providing an approved source of water for consumption and notification to the users to not consume the piped water in the facility. This work sheet is intended to outline procedures and contacts to address such emergencies. If an emergency occurs, immediately contact your local health department for further instructions.

Facility Personnel

List person(s) responsible for facility (owner or designee) and person(s) in routine charge of water system operation and treatment (certified operator) title and telephone number (include land line and mobile phones).

Name	Title	Phone	Email
	Owner		
	Operator		

Contacts List contacts for emergencies involving drinking water.

Local Health Department	Name	Phone & Email
Department of Environment, Great Lakes, and Energy	Name	Phone & Email
District		
Lansing		
Certified Laboratories	Address	Phone & Email
(Lab for emergency use*)		

*Lab that would be open on the weekend or in another region that may not be affected by the emergency event.

Contractors	Name	Phone & Email
Well Driller		
Plumber		

Excavator		
Alternate Water Source	Name	Phone
Purchased water (bottled)		
(Other alternate approved source)		

Method of dispensing water to individuals in sanitary manner:

Reminders List other consumptive water uses or equipment that may be directly connected to the potable water supply. Indicate if any of the listed water uses are in the facility and thus need to be addressed.

Type of Water Using Fixture	Yes / No	Location
Drinking fountains to shut off		
Ice machines (discard contents)		
Post mix soft drinks to disconnect		
Coffee, tea, juice, soup, vending		
Other		

Note: If the water supply loses pressure or cannot be used due to unsafe conditions, any equipment used for food service or consumption which is connected to the water supply will need to be disinfected per the manufacturer's specifications.

Public Notification Consumers are to be advised of a problem with the water and availability of an alternate source of water for consumption.

Post public notice at sinks and any other potential drinking water outlets that cannot be shut off.

List locations to be posted

Retain copy of signed and dated public notice.

List any other means to notify public (Schools/Child Care Centers/Children's Camps are recommended to provide notice to parents.)

Consult your local health department for the required public notification language and format.
You must have approval from your local health department prior to resuming use of your water supply for consumption.

Worksheet 2
Financial Plan Worksheet
Cost Estimates for New Nontransient Noncommunity Water Supplies

This worksheet is to provide general information and ranges of cost for completing the Financial Plan portion of a Capacity Assessment Application. The intent is for the water supply owner to identify costs of operating a public water system including contingencies and plan accordingly. All costs may not be applicable to your water supply.

Construction Costs Estimates

Well Construction/Pump Installation	_____
Storage Tank(s)	_____
Treatment Equipment	_____
Permit Fees	_____
Total	_____

Information sources: water well drilling contractors, water well pump installers, suppliers, water treatment firms, local health department fee schedule, consulting firms.

Cost of Connection to Municipal Water (if available)

Tap fee	_____
Hook up (excavation, materials, labor, etc.)	_____
Usage (estimated annual water bills)	_____
Total	_____

Information Sources (municipality, contractors, consultants)

Operator Certification and Training

Certification Costs	_____
Examination/renewal	_____
Wages (3 hours per week to full time depending on system)	_____
Outsource Operator	_____
Training Costs (minimum of 3 hours continuing ed per year)	_____
Total	_____

Information sources: employee salary structures, travel costs, certified operators for hire, consulting firms

Annual Water Supply Operation & Maintenance

Electricity	_____
Treatment Chemicals/Treatment Equipment/Service	_____
Backflow Prevention Device Testing	_____
EGLE Annual Water Supply Fee	_____
Other	_____
Total	_____

Information sources: utilities, chemical/equipment suppliers, plumbing contractors, consulting firms.

Water Sample Collection and Analysis

Annualized costs for analysis based on routine sampling for all parameters with waivers and EGLE laboratory fees (subject to change).

Analyte	Estimated Cost Annually		Actual Cost
Total Coliform	4 @ \$16	\$64.00	
Nitrate	1 @ \$18	18.00	
Arsenic	1 @ \$18 / 3 yrs.	6.00	
Metals	1 @ \$102 / 3 yrs.	34.00	
Cyanide	1 @ \$25 / 3 yrs.	8.00	
VOC	1 @ \$100 / 6 yrs.	17.00	
SOC	3 @ \$365 / 6 yrs.	183.00	
PFAS	1 @ \$290	290.00	
Lead Copper	5 @ \$26 / 6 months	260.00	
Total		\$590.00*	

*Your cost may differ per year due to size of system, sampling requirements, or water quality issues.

Information sources: certified drinking water laboratories, consulting firms, EGLE monitoring requirements.

Emergency Repairs/Contingency Funds

Disinfection/Flushing

Bottled Water (cost for 2 week supply)

Pump Replacement

Emerging Contaminants Testing

Other

Total

Information sources: well drilling/pump contractors, bottled water suppliers.

Emergency Action Plan

Noncommunity Public Drinking Water Systems

Emergency Plan Purpose: In the event of an emergency pertaining to the drinking water supply, it is necessary to act promptly and effectively to protect public health and welfare. In the context of this plan, emergencies could include complete loss of water pressure, contamination of water supply, and threats or observed vandalism to water supply. Complete loss of water normally would require closure of the facility. Threats or contamination with unknown substances may also warrant such action. However, under certain situations where water is flowing but has been determined unsafe to drink by health authorities, it may be possible to operate the facility with approval of the appropriate local or state agencies. If approved, operation for an interim period is dependent on providing an approved source of water for consumption and notification to the users to not consume the piped water in the facility. This fact sheet is intended to outline procedures and contacts to address such emergencies. If a water emergency occurs, contact your local health department for further instructions.

System Information

Keep this basic information easily accessible to authorized staff for emergency response

Water System Name	
Water Supply Serial Number (WSSN) and Well WSF IDs	WSSN IDs (ex: WL001, WL002, WL003)
Population Served and Service Connections	Nontransient persons _____ Transient persons _____ Number of connections _____

In any event, there are a series of general steps to take:

1. Analyze the type and severity of the emergency;
2. Act to save lives;
3. Act to reduce injuries and system damage;
4. Make repairs based on priority demand, and
5. Return the system to normal operation.

Emergency Contact/Notification Information

Contact the Local Health Department Staff to notify them of the situation as soon as possible or for help

Contact	Name & Position	Phone	Email
System Owner			
System Operator			
Other Responsible Person			
Local Health Dept			
EGLE District Staff			
Certified Testing Laboratory			

Contact	Name & Position	Phone	Email
Alternate Certified Testing Laboratory (for weekends)			
Well Driller			
Plumber			
Electrician			
Electric Utility Co.			
Water Treatment Equipment/Chemical Supplier			
Gas/Propane Supplier			
Police/Fire			
Emergency Medical Services			
Engineer/Consultant			

Alternative Water Sources

An approved alternative source of water is required during precautionary measures when water supply is at risk.

Alternative Source	Names (where water is purchased)	Phone
Purchased water		
Bulk water suppliers for potable water use		
Tanker trucks in the area available to deliver bulk water for non-potable use		

Method of dispensing water to individuals in a sanitary manner:

Water Equipment

Other consumptive water uses or equipment that may be directly connected to the potable water supply. Indicate if any of the listed water uses are in the facility and thus need to be addressed.

Type of Water Using Fixture	Yes or No	Location(s)
Drinking fountains to shut off		
Ice machines (discard contents)		
Post mix soft drinks to disconnect		
Coffee, tea, juice, soup, vending, etc.		
Other		

Note: If the water supply loses pressure or cannot be used due to unsafe conditions, any equipment used for food service or consumption which is connected to the water supply will need to be disinfected per the manufacturer's specifications.

Public Notification

Consumers are to be advised of a problem with the water and availability of an alternate source of water for consumption. Retain a copy of the signed and dated public notice. Send a copy to your local health department. Consult your local health department for the required public notification language and format.

List locations to be posted (Post PN at all sinks and any other potential drinking water outlets that cannot be shut off)

List of persons who need to be notified (Schools, Child Care Centers, Children's Camps, are recommended to provide notice to parents)

Media Notification List

Organization or Department	Name & Position	Phone	Email
Newspaper - Local			
Newspaper – Regional/State/Tribal			
Radio			
Radio			
TV Station			

Water Emergency Actions

1. Immediately limit access to all faucets that may be used for water consumption. If you have power and well pump can run, “bag” faucets or turn off water to the faucet.
2. Contact your local health department environmental health staff. Get instructions and public notice posting document.
3. Post all sinks where water may be used for consumption. Notify employees and customers not to consume the water. (No drinking, brushing teeth, or use of water in a food or beverage product).
4. Provide an alternate source of water (bottled) if your business stays open.
5. Contact service and repair contractors.
6. Repair system. Flush, disinfect and flush as needed.
7. Collect bacteriological sample & send to laboratory.
8. Collect second bacteriological sample 24 hours after first sample & send to laboratory.
9. Contact your local health department for approval to serve your system water to the public.

Response Actions for Specific Events:

The following tables identify the assessment, set forth immediate response actions, define what notifications need to be made, and describe important follow-up actions.

A. Power outage

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

B. Treatment equipment failure

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

C. Source pump failure

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

D. Microbial (coliform, *E. coli*) contamination

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

E. Chemical contamination

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

F. Vandalism or terrorist attack

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

G. Reduction or loss of water in the well

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

H. Flood

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

I. Hazardous materials spill in vicinity of sources or system lines

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

J. Other

Assessment	
Immediate Actions	
Notifications	
Follow-up Actions	

Returning to Normal Operation

You must have approval from your local health department prior to resuming use of your water supply for consumption.

Description and Actions

EXAMPLE LETTER

LHD: Remove or add information as needed. This base letter includes NT requirements.

RE: Permit to alter a water supply at
WSSN

Dear _____ :

This letter serves as the approval to alter the Type II public water supply of water system.

Construction

Describe water supply and the proposed changes. For “found systems” or reclassifications describe how the business is currently operating.

Water Sampling

After disinfection of the water system and pumping to waste, the health department, the owner, or their authorized representative may collect the water samples.

1. Bacteria (Coliform)
 - a. A minimum of two samples (obtained 24 hours apart) must be bacteria free before the system can be approved for consumption. The samples shall be collected at the following locations:
 - i.
 - ii.
 - b. Distribution Testing: A routine sample location and frequency will be determined once two consecutive acceptable bacteriological samples are obtained.
2. Nitrate and Nitrite
3. Complete Metals: This is a ten-analyte test for various metals, which will include arsenic.
4. Arsenic: Arsenic is included in the complete metals test.
5. Cyanide
6. Synthetic Organic Compounds (SOC): This analysis consists of six containers and analyzes the water for 38 compounds.
7. Volatile Organic Compounds (VOC): This analysis contains 40 required analytes.
8. Per- and Polyfluoroalkyl Substances (PFAS): Seven regulated compounds are included in this analysis.
9. Lead/Copper: Once the well is approved and the distribution plumbing is finished and in use, LHD Staff will meet at your facility to establish lead/copper monitoring frequencies and locations.

The water sample laboratory results must be in compliance with the Safe Drinking Water Act, Act 399 P.A. 1976 before the well will be approved.

Capacity Development

LHD: Remove section as applicable.

A capacity development form will need to be completed by the well owner (not property developer) and returned to this office prior to well approval. The purpose of capacity development is to address technical, managerial, and financial concerns for the water supply as well as develop emergency response plans. Part of this capacity development will be contracting with a certified drinking water operator. A nontransient Type II noncommunity supply of this size without treatment will require an operator with a S-5 certification; however, any treatment requirements cannot be fully assessed without knowing the water quality of the proposed well.

Conclusion

LHD must be contacted for final inspection once the changes have been completed and the water samples have been analyzed.

If there are any questions regarding what is required, or if changes to the permit or procedures are proposed, please contact this office for approval.

EXAMPLE LETTER

LHD: Remove or add information as needed. This base letter includes NT sample and other requirements.

RE: Permit to install a water supply well at
WSSN (Source WSF ID)

Dear :

Enclosed is the approved well permit application for the Type II public water supply water well for .
The conditions of this permit are as follows:

Construction

The proposed well is to serve describe the business/facility. The calculated peak demand for this water system is gallons per minute (GPM). Ensure the water well contractor is aware of this minimum requirement for pump size and aquifer capacity.

Isolation/Location

The proposed location for the well is describe where the well will be located on the property. *For example: the well is to be installed in the northwest section of the property. The location is approximately 15' from the west wall of the building.*

The well is to be located a minimum of 75 feet from all potential sources of contamination such as: septic fields, septic tanks, dry wells, buried sewer lines, surface water (lakes, streams, ponds, etc.), storm sewer lines, catch basins or animal pastures.

The well is to be located a minimum of 800 feet from major sources of contamination such as: landfills, large scale sewage disposal facilities, chemical storage tanks, buried fuel tanks, waste water lagoons or buried waste holding tanks.

Describe any deviations for isolation here (delete if not necessary)

Grouting

The well must be grouted the entire casing length using materials and methods approved by the department. LHD must be notified prior to grouting of the well. Discuss and special grouting requirements

Well Record

The well drilling contractor is to complete the well record (well log) upon completion of the well and submit a copy directly to LHD for use at the final inspection. Ensure the well is identified with WSSN and source number in Wellogic. The well will not be approved until a complete well record is submitted to the LHD.

Water Sampling

A usable and unthreaded sample tap must be located near the pressure tank. The sample tap should have a 1/4 inch, downward turned, unthreaded outlet and be operated by a ball valve or a good quality gate valve.

All water sample laboratory results must be in compliance with the Safe Drinking Water Act, Act 399 P.A. 1976 before the well will be approved.

After disinfection and pumping to waste, the health department, the owner, or their authorized representative may collect the water samples. Samples for 1 through 8 must be collected at the location specified by the local health department and sent to a laboratory certified to conduct the analysis. Results must be reviewed and approved by the department prior to use of the water by the public.

1. Bacteria (Coliform)

- a. A minimum of two samples (obtained 24 hours apart) must be bacteria free before the system can be approved for consumption. The samples shall be collected at the following locations:
 - i.
 - ii.

- b. Distribution Testing: A routine sample location and frequency will be determined once two consecutive acceptable bacteriological samples are obtained.
- 2. Nitrate and Nitrite
- 3. Complete Metals: This is a ten-analyte test for various metals, which will include arsenic.
- 4. Arsenic: Arsenic is included in the complete metals test.
- 5. Cyanide
- 6. Synthetic Organic Compounds (SOC): This analysis consists of six containers and analyzes the water for 38 compounds.
- 7. Volatile Organic Compounds (VOC): This analysis contains 40 required analytes.
- 8. Per- and Polyfluoroalkyl Substances (PFAS): Seven regulated compounds are included in this analysis.
- 9. Lead/Copper: Once the well is approved and the distribution plumbing is finished and in use, LHD Staff will meet at your facility to establish lead/copper monitoring frequencies and locations.

Well abandonment

The existing well is required to be properly abandoned when the new well is placed into service. Proper abandonment includes removal of the well components and filling the borehole or casing with a high solids bentonite slurry, neat cement, or coarse grade dry bentonite.

Capacity Development

While not part of the drilling activities, a capacity development form will need to be completed by the well owner (not property developer) and returned to this office prior to well approval. The purpose of capacity development is to address technical, managerial, and financial concerns for the water supply as well as develop emergency response plans. Part of this capacity development will be contracting with a certified drinking water operator. A nontransient Type II noncommunity supply of this size without treatment will require an operator with a S-5 certification; however, any treatment requirements cannot be fully assessed without knowing the water quality of the proposed well.

Conclusion

If you have not chosen the well contractor yet, please make sure to provide them with a copy of this letter and any enclosures so the contractor is aware of the permit requirements. LHD must be contacted for final inspection once the well has been completed.

If there are any questions regarding what is required, or if changes to the permit or procedures are proposed, please contact this office for approval.

Noncommunity Water Supply Permit Issuance & Final Approval Checklist

PERMIT INFORMATION			
Establishment Name:		WSSN:	
Classification: ☐ Transient ☐ Nontransient (NT)		Population: Transient: _____ Nontransient: _____	
Premise Type:		Annual Operating Period:	
PERMIT TO CONSTRUCT ISSUANCE		FINAL APPROVAL	
☐	Application Complete	☐	Well Record Received and Reviewed
☐	Capacity Development Completed (New NT)	☐	Peak Demand Met
☐	Pre-Drilling Site Review Completed Date	☐	Sanitary Survey Completed Date
☐	Peak Demand Confirmed # GPM	☐	Deviation Condition Met
		☐	Additional Construction Criteria Approved
☐	Permit Letter Completed	☐	Pre-Opening Samples Collected Bacteria (2 @ 24 hour separation) Nitrate and Nitrite Nontransient: Arsenic, VOC, SOC, PFAS, Metals, Cyanide
		☐	Bacteria Sample Siting Plan Routine: Repeats:
		☐	NT: Lead/Copper Sample Siting Plan Routine: (Semi-annual full set for new source)
		☐	Water Supply Approval Letter
☐	Deviation Issued & Documented	☐	NT: DSMI Certification Form Completed
☐	Additional Construction Criteria Documented	☐	NT: Capacity Development Form Completed
Staff:		Staff:	

- ☐ Permit entered into SDWIS
- ☐ Survey and Sample Points entered into SWIFT
- ☐ Monitoring Frequencies and Sample Schedules in SDWIS

EXAMPLE LETTER

LHD: Remove or add information as needed. This form can be completed by the LHD and signed by the owner.

Isolation Deviation Request Form

System Name:

Water Supply Serial Number:

Well Address:

Well Permit Application Number:

I hereby request a deviation of the Michigan Safe Drinking Water Act, 1976 PA 399 as amended, pertaining to the location of a well in relation to potential source(s) of contamination.

A deviation is requested from Standard Isolation Rule 325.10808 and Major Isolation Rule 325.10812 to reduce the minimum isolation requirement of 75' and 800' respectively.

Name requires a replacement well at address to serve an existing describe business e.g. dairy operation.

Use this area to define the reduction distance. e.g. Reduction of isolation distance from the minimum requirement of 800' feet to no less than 675' feet between my proposed well location and existing manure storage pond.

Additional construction criteria are required:

- Use this are to define construction requirements. e.g. Well must be drilled through confining material of 10 feet of continuous clay, or 20 feet of continuous clay mixture or minimum casing depth of 100 feet. Well must be located in the northwest corner

The deviation request above was completed by sanitarian at LHD.

Well Owner Signature

Date

Print Name:

Deviation based on Michigan Department of Environment, Great Lakes, and Energy protocol for reducing minimum isolation distances for major sources of contamination.

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY		
Original Effective Date: Unknown Revised Date: November 2003 Reformatted Date: April 1, 2015	Subject: Minimum Isolation Distances: Private and Public Water Wells Program Name: Well Construction Program <table border="1"> <tr> <td>Number: ODWMA-368-127-011</td> <td>Page: 1 of 6</td> </tr> </table>		Number: ODWMA-368-127-011	Page: 1 of 6	Category: ☐ Internal/Administrative ☐ External/Non-Interpretive ☒ External/Interpretive Type: ☐ Policy ☐ Procedure ☒ Policy and Procedure
Number: ODWMA-368-127-011	Page: 1 of 6				

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION:

Michigan law requires that certain minimum isolation distances be maintained when constructing a new water well (private or public) near a potential contamination source. The actual location of the well will often be determined by factors other than sources of contamination or geologic conditions. Land surface features, such as steep slopes and poorly drained areas, are considerations in the location of the well. Whenever possible, wells should be located at higher elevations than the surrounding areas to decrease the potential for contamination.

In general, minimum isolation distances should not be the standard. In some cases – for example a well installation near a groundwater contamination site – the isolation distance should be maximized to provide the well owner with the best possible chance of maintaining a safe water supply.

For Private and Type III and Type II Public Water Supplies, local health departments (LHDs) have the authority to increase isolation distance based on various factors, such as groundwater conditions or contamination sources. The LHDs also have the authority to decrease the isolation distance from a well to a potential source of contamination through the use of deviations. Deviations are issued on a case-by-case basis; maintaining public health protection is essential. Criteria for issuance of deviations are set forth in R 325.1613 of the Groundwater Quality Control Rules, promulgated pursuant to Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended (Act 368); and R 325.10809 of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399) Rules.

AUTHORITY:

Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399)

Groundwater Quality Control (Part 127 of Act 368)

STAKEHOLDER INVOLVEMENT:

The March 10, 2015, revisions to this policy and procedure were a result of the DEQ, Michigan Department of Agriculture and Rural Development, and Natural Resources Conservation

OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
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Number: ODWMA-368-127-011

Subject: Minimum Isolation Distances: Private and
Public Water Wells

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Service (NRCS) meeting in 2013 and 2014 and collaborating to create a Memorandum of Understanding, as described under the "Comments" section.

DEFINITION:

Deviation – A reduction in isolation between the well and a source of contamination, granted in writing by the LHD.

POLICY:

The following lists sources of contamination and the well isolation distances required from those sources by state codes. The DEQ and LHDs have authority to issue deviations from these minimum isolation distances on a case-by-case basis. Criteria for issuance of deviations are set forth in R 325.1613 and R 325.10809.

** = For the isolation distances marked with a single asterisk, the isolation distance is for a source of contamination, which is not specifically listed in the rules. However, the source of contamination is interpreted as belonging to a general contamination source group (i.e., a sewage holding tank is the same as a septic tank), which is listed in the rules; therefore, the isolation distance listed in this document is **required**.*

*** = For the isolation distances marked with a double asterisk, the isolation distance is for a source of contamination, which is not specifically listed in the rules. However, the DEQ has established a **recommended** isolation distance based on the contaminant involved, the risk to public health, and other factors. Under the general authority of an LHD Health Officer's responsibility to protect public health, a Health Officer may modify this recommended isolation distance, either increasing or decreasing it, on a case-by-case basis.*

REQUIRED MINIMUM ISOLATION DISTANCE (FEET)			
Contamination Source	Part 127 of Act 368	Act 399	
		IIb and III	I and IIa
Agricultural Chemical/Fertilizer Storage or Preparation Area	150	800	2000
Animal/Poultry Yard	50	75	200
Brine Wells/Injection Wells	**150	**800	**2,000
Building or Projection thereof	3	3	3
Cemetery/Graves	**50	*75	*200
Cesspool	50	75	200
Chemical Storage	150	800	2,000

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REQUIRED MINIMUM ISOLATION DISTANCE (FEET) cont'd			
Contamination Source	Part 127 of Act 368	Act 399	
		IIb and III	I and IIa
Contaminant Plumes (Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended [Act 451])	**150	**800	**2,000
Contaminant Plumes (Part 213, Leaking Underground Storage Tanks [LUST], of Act 451, or LUST Sites)	**150	**800	**2,000
Drainfield	50	75	200
Drywell	50	75	200
Footing Drains	10	10	10
Fuel/Chemical Storage Tanks – Underground or Above-Grade, and Associated Piping			
- depot/tank farm	300	800	2,000
- 1,100 gal. or larger, without secondary containment	300	800	2,000
- 1,100 gal. or larger, with secondary containment	50	800	2,000
- less than 1,100 gal., which store motor or heating fuel for noncommercial purpose(s) or consumptive use on premises where fuel is stored	50	800	2,000
- less than 1,100 gal., which store motor fuel for commercial purpose(s)	*50	800	2,000
- located in a basement, regardless of size	*50	800	2,000
Grease Trap	50	*75	*200
Kennels	50	*75	*200
Landfill or Dump Sites (active or inactive)	800	800	2,000
Liquid Petroleum (LP) Tanks (see <i>Comments, Page 5</i>)			
Liquid Waste Draining Into the Soil	50	*75	200
Metering Station for Pipelines	*300	*300	*300
Municipal Wastewater Effluent or Sludge Disposal Area (land surface application or subsurface injection)	300	800	2,000

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REQUIRED MINIMUM ISOLATION DISTANCE (FEET) cont'd			
Contamination Source	Part 127 of Act 368	Act 399	
		IIb and III	I and IIa
Oil or Gas Wells	300	300	300
Other Wastewater Handling or Disposal Unit	50	*75	*200
Petroleum Product Processing or Bulk Storage	300	800	2,000
Pipelines			
- gas, oil, etc.	*300	*300	*300
- natural gas (see <i>Comments, Page 5</i>)			
Privy/Outhouse	50	75	200
Seepage Pit	50	75	200
Septage Waste (land application area)	800	800	2,000
Septic Tank	50	*75	*200
Sewage Lagoon Serving a Single Family Dwelling	50	75	200
Sewage Lagoon Effluent – Land Application Area	50	800	2,000
Sewage or Liquid Waste Draining Into Soil	50	*75	*200
Sewage Pump Chamber, Transfer Station, or Lift Station	50	75	200
Sewers			
- buried gravity sewer (sanitary or storm) – service weight or heavier ductile iron or cast iron, or Schedule 40 PVC, all with watertight joints	10	75	200
- buried pressure sewer (sanitary or storm) watertight joints (pressure tested after installation to 100 psi), equivalent to Schedule 40 or SDR 21, and meets or exceeds ASTM Specifications D1785-91 or D2241-89	10 (by written deviation only)	75	200
- buried gravity or pressure sewer (sanitary or storm), constructed of materials not meeting the specifications listed in the two categories above, or the materials are unknown	50	75	200

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REQUIRED MINIMUM ISOLATION DISTANCE (FEET) cont'd			
Contamination Source	Part 127 of Act 368	Act 399	
		IIB and III	I and IIA
Sump Pit			
- receiving other than household waste (footing drain, roof drain, etc.)	10	10	10
- receiving household waste (laundry, softener backwash, sink waste, etc.)	50	75	200
Surface Water (lake, river, stream, pond, ditch, etc.)	10	75	200
Unfilled Space Below Ground Surface (except an approved basement, basement offset, or crawl space beneath a single family dwelling)	10	10	10

COMMENTS:

Natural gas and LP are not considered sources of groundwater contamination because of the volatile gas nature of the fuels. If leaks occur, the gases escape into the atmosphere. Leaked gases do not migrate downward into the soil. Wells should be sufficiently isolated from natural gas lines or LP tanks to minimize the potential for damage to the lines or tanks during well construction or repair, trenching of water lines, etc., and to allow accessibility to the well.

To address the concerns regarding locating new manure, fuel, and chemical storage structures within the isolation area of existing wells on farms, a protocol was developed in 2005 by the DEQ to construct certain facilities on farms within the 800-foot isolation area of Type IIB and Type III Public Water Supplies. It was incorporated by the NRCS into their agency's process for evaluating and funding relevant farm construction projects.

This protocol was the foundation for the development of a Memorandum of Understanding [MOU] Between Michigan Department of Agriculture and Rural Development and Michigan Department of Environmental Quality in 2014 for the purpose of delineating the respective roles and responsibilities regarding state agency evaluation of isolation distances of existing drinking water wells from new and existing sources of contamination on farm operations. This MOU includes "Procedure A: Public Well Isolation Distances – Criteria for Reducing the Well Isolation Distance from Major Sources of Contamination," which was expanded and updated July 21, 2014.

The DEQ believes the protocol facilitates improvements on farms and protects the farm drinking water supplies. While the intent of the protocol is to site or evaluate existing sources of contamination with reduced isolation to existing water wells, it may be used to assist the LHD where the consideration of deviations for new construction is necessary.

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PROCEDURES:

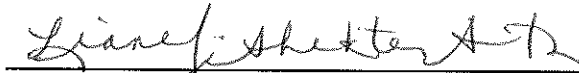
Step	Who	Does What
1	LHD Staff	Consider the minimum isolation distance requirements when issuing well construction permits, reviewing water well records, and conducting well final inspections.
2	LHD Staff	Issue written deviations to reduce the minimum isolation distance requirements while still protecting public health.
3	Registered Water Well Drilling Contractor	Drill water wells that meet the minimum isolation requirements in Part 127, or as documented in a written deviation.

REFERENCE:

Memorandum of Understanding Between Michigan Department of Agriculture and Rural Development and Michigan Department of Environmental Quality, Regarding State Agency Collaboration on Evaluating Well Isolation Distance on Farm Operations, effective September 4, 2014.

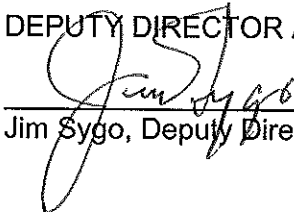
Compliance with Part 127 shall be based on the statute and rules promulgated under Part 127. Nothing in this policy and procedure shall be used in an enforcement action brought against a Registered Water Well Drilling Contractor or Pump Installer. This policy and procedure shall expire on December 31, 2016, unless superseded before that date.

OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

**MEMORANDUM OF UNDERSTANDING
BETWEEN
MICHIGAN DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT
AND
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Regarding State Agency Collaboration on Evaluating
Well Isolation Distance on Farm Operations**

I. Purpose

This Memorandum of Understanding (MOU) between the Michigan Department of Agriculture and Rural Development (MDARD) and the Michigan Department of Environmental Quality (MDEQ) is entered into for the purpose of delineating the respective roles and responsibilities regarding state agency evaluation of isolation distances of existing drinking water wells from new and existing sources of contamination on farm operations.

II. Period of Agreement:

This MOU shall be effective and ongoing once both parties have signed the agreement.

III. Authority:

The MDARD is statutorily charged under the Michigan Right to Farm Act, Public Act 93 of 1981, as amended, with the siting of new and expanding livestock production facilities. Furthermore, the MDARD is statutorily charged under the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, Part 87 (Groundwater and Freshwater Protection), as amended, with the programming and operation of the Michigan Agriculture Environmental Assurance Program (MAEAP).

The Michigan Commission of Agriculture and Rural Development, hereinafter referred to as the Commission, is statutorily charged under the Michigan Right to Farm Act, Public Act 93 of 1981, as amended, with the responsibility for the development and annual review of generally accepted agricultural and management practices for farms and farm operations, hereinafter referred to as GAAMPs. Furthermore, the Commission is statutorily charged under the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, Part 87 (Groundwater and Freshwater Protection), as amended, with the development and annual review of the MAEAP Verification Standards for farms and farm operations seeking MAEAP verification.

The MDEQ is statutorily and constitutionally charged under the Public Health Code, Public Act 368 of 1978, Part 127, and the Safe Drinking Water Act, Public Act 399 of 1976, with the responsibility of oversight for the protection of public water supplies.

The MDARD and MDEQ recognize the need to protect the air, water, and natural resources of the state from pollution, impairment, or destruction while maintaining a viable agriculture industry.

IV. Responsibilities:

Michigan Department of Agriculture and Rural Development

The MDARD will adhere to the following procedures when evaluating the isolation distance from an existing drinking water well to a new or existing source of contamination:

- a. The well isolation distance will be evaluated according to the **Public Well Isolation Distances CRITERIA FOR REDUCING THE WELL ISOLATION DISTANCE FROM MAJOR SOURCES OF CONTAMINATION** (Procedure A attached).
- b. If the well does not meet the criteria outlined in Procedure A, then the **PROCEDURE FOR SITE SPECIFIC EVALUATION OF WELL ISOLATION DISTANCES FROM SOURCES OF POTENTIAL CONTAMINATION ON FARM OPERATIONS** (Procedure B attached) will be utilized. A well that does not meet the criteria in Procedure A will be evaluated by MDARD to determine if a further reduction in isolation distance may be acceptable.

The MDARD will work with local conservation district staff and industry partners providing technical support to farm operations to educate them on the procedures.

The MDARD will work with farm operations to educate them on the classification of their water supply and advise them to contact the appropriate agency for assistance with meeting any responsibilities under the Michigan Safe Drinking Water Act, Public Act 399 of 1976, as amended.

Michigan Department of Environmental Quality

The MDEQ will work with the MDARD to provide written evaluations on wells not meeting the criteria established in Procedure A.

The MDEQ will make recommendations, as appropriate, on matters relating to environmental concerns regarding public water supplies on farms and farm operations, and foster cooperation between MDARD and MDEQ.

The MDARD and the MDEQ agree to exercise their respective roles and responsibilities, as specified herein, for the purpose of protecting the air, water, and natural resources of the state from pollution, impairment, or destruction while maintaining a viable agriculture industry.

V. Termination of Agreement:

This agreement may be terminated by 30-day written notice by either party.

VI. Modification of Agreement:

This agreement may be modified by mutual agreement only in writing and signed by both parties.

VII. Agency Contacts:

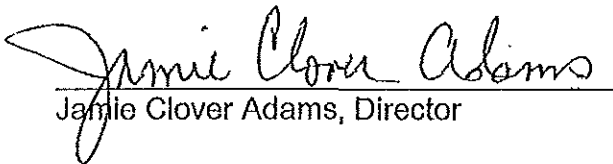
Michigan Department of Agriculture and Rural Development
Michelle Crook, Environmental Stewardship Division
(517) 284-5625, crookm@michigan.gov

Michigan Department of Environmental Quality
Dana DeBruyn, Non-Community and Private Drinking Water Supplies Unit
(517) 284-6524, debruynd@michigan.gov

VIII. Signatories

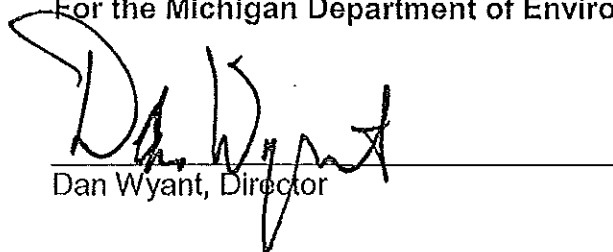
In witness whereof, the parties sign their names as evidence of their approval of this MOU.

For the Michigan Department of Agriculture and Rural Development:


Jamie Clover Adams, Director

7/23/14
Date

For the Michigan Department of Environmental Quality:


Dan Wyant, Director

9.4.14
Date

PROCEDURE A

Public Well Isolation Distances

CRITERIA FOR REDUCING THE WELL ISOLATION DISTANCE FROM MAJOR SOURCES OF CONTAMINATION

THESE CRITERIA ARE APPLICABLE TO EXISTING TYPE IIA, TYPE IIB AND TYPE III PUBLIC WATER SUPPLIES ON AGRICULTURAL OPERATIONS WHERE IT IS NECESSARY TO UPGRADE AN EXISTING WASTE STORAGE STRUCTURE, HANDLING AREA, OR TANK FOR MAJOR SOURCES OF CONTAMINATION WITHIN THE ISOLATION DISTANCE OF A DRINKING WATER WELL. THESE CRITERIA MAY ALSO BE USED IN CONJUNCTION WITH THE A*SYST TOOLS AND REQUIREMENTS USED FOR MAEAP VERIFICATION. TANKS OR STRUCTURES THAT COMPLY WITH APPLICABLE REGULATIONS AND ARE LOCATED IN ACCORDANCE WITH THIS PROCEDURE IS CONSIDERED TO BE COMPLYING WITH THE REQUIREMENTS TO MAINTAIN ISOLATION DISTANCE FROM THE WELL TO THE CONTAMINANT SOURCE.

- A TYPE II WATER SUPPLY IS CLASSIFIED AS ANY NON-COMMUNITY PUBLIC WATER SUPPLY.
 - A TYPE IIA WATER SUPPLY IS AN OPERATION WITH 25 OR MORE EMPLOYEES AND A MONTHLY AVERAGE WATER USE OF 20,000 GALLONS PER DAY OR MORE (TOTAL OF ALL WELLS ON SITE).
 - A TYPE IIB WATER SUPPLY IS AN OPERATION WITH 25 OR MORE EMPLOYEES AND USING LESS THAN 20,000 GALLONS PER DAY.
- A TYPE III WATER SUPPLY IS ANY DAIRY OPERATION THAT DOES NOT MEET THE REQUIREMENTS ABOVE OR A FARM OPERATION WITH 1-24 EMPLOYEES.

THE ISOLATION DISTANCE FROM MAJOR SOURCES OF CONTAMINATION FOR TYPE IIA WATER SUPPLY WELLS IS 2,000 FEET.

FOR TYPE IIB AND TYPE III WATER SUPPLY WELLS, THE ISOLATION DISTANCE IS 800 FEET.

Type IIA – Reduction allowed down to 1,000 feet Type IIB and Type III – Reduction allowed down to 400 feet:	Type IIA – Reduction allowed down to 500 feet Type IIB and Type III – Reduction allowed down to 200 feet:
Where the following protection factors are documented:	Where the following protection factors are documented:
A or B + C or, E	A + B or, E + B + C or, A + C or, E + D A + E or, F (agricultural and fuel storage only)

PROTECTION FACTORS:

A – Based on groundwater flow direction, well is up-gradient from the contamination source

B – Confining material of 10 feet continuous clay, 10 feet of continuous shale, or 20 feet continuous clay mixture

C – Well casing depth is 100 feet or more

D – B (minimum of 10 feet of continuous clay, 10 feet of continuous shale, or 20 feet continuous clay mixture) + C (minimum of 60 feet casing depth) = 100 feet or more

E – Manure storage constructed with flexible membrane liners, or reinforced concrete, or steel, or solid manure stacking facility with concrete floor constructed in accordance with USDA Natural Resources Conservation Service field office technical guide standard for Waste Storage Facility (313), and the well sited or graded to protect the water supply in the event of failure. The structure must have been built within the 15 years prior to the well assessment, or be certified by a professional engineer that the structure provides equivalent environmental protection. Plain concrete liners do not meet this criteria.

07/21/2014

PROCEDURE A

F - Fuel storage facilities without secondary containment meeting factor D may be reduced to 500 feet for a Type IIA well or 200 feet for Type IIB and Type III. Agrichemical containment facilities (secondary containment required) and fuel storage facilities *with secondary containment* (meeting the regulating agencies requirements) may be reduced further. The actual isolation distance when secondary containment is present should be maximized to the extent possible and not less than 200 feet for Type IIA, nor less than 75 feet for a Type IIB or Type III.

Additional Requirements for Siting New Major Sources of Contamination:

Wells must be properly constructed and unused wells properly plugged, in accordance with Part 127. Wells must be sampled and bacteriologic and nitrate standards levels must meet drinking water standards.

In order for a manure storage structure to be considered for an isolation distance reduction under this procedure, the structure must be built to NRCS standards or verified as environmentally equivalent.

The local health department shall be provided with a copy of the decision wherever this protocol is used to reduce isolation from an existing well to a new major source of contamination. Deviations from isolation distances authorized through issuance of well construction permits may incorporate additional criteria in accordance with PA 399 of 1976, or PA 368 of 1978, Part 127. It is the owner's responsibility to maintain the well in good working condition and in accordance with the permit conditions.

Additional Requirements for Evaluating Existing Components (Wells and Major Sources of Contamination):

Wells must appear to be properly constructed (evidence by good maintenance, age, and integrity as identified with the A*SYST tools used for MAEAP verification) and unused wells properly plugged, in accordance with Part 127. Wells must be sampled and bacteriologic and nitrate standards levels must meet drinking water standards.

In order for a manure storage structure to be considered for an isolation distance reduction under this procedure, the structure must be built to NRCS standards within the last 15 years or verified as environmentally equivalent.

The local health department shall be provided with a copy of the decision wherever this protocol is used to reduce isolation from an existing Type IIA or IIB well to an existing major source of contamination. Deviations from isolation distances authorized through issuance of well construction permits may incorporate additional criteria in accordance with PA 399 of 1976, or PA 368 of 1978, Part 127. It is the owner's responsibility to maintain the well in good working condition and in accordance with the permit conditions.

PROCEDURE B

PROCEDURE FOR SITE SPECIFIC EVALUATION OF WELL ISOLATION DISTANCES FROM SOURCES OF POTENTIAL CONTAMINATION ON FARM OPERATIONS

THIS PROCEDURE APPLIES TO EXISTING TYPE IIA, TYPE IIB, AND TYPE III PUBLIC WATER SUPPLIES ON AGRICULTURAL OPERATIONS WHERE IT IS NECESSARY TO UPGRADE OR EVALUATE AN EXISTING WASTE STORAGE STRUCTURE, HANDLING AREA, TANK, AGRICHEMICAL HANDLING AREA, OR FUEL STORAGE AREA FOR MAJOR SOURCES OF CONTAMINATION WITHIN THE ISOLATION DISTANCE OF A PUBLIC WELL.

FOR AN AGRICULTURAL OPERATION TO BE FOUND TO BE IN CONFORMANCE WITH THE GENERALLY ACCEPTED AGRICULTURE AND MANAGEMENT PRACTICES FOR SITE SELECTION AND ODOR CONTROL FOR NEW AND EXPANDING LIVESTOCK FACILITIES, OR TO BE VERIFIED UNDER THE MICHIGAN AGRICULTURE ENVIRONMENTAL ASSURANCE PROGRAM, MDARD MUST EVALUATE THE MANURE STORAGE AREAS, AGRICHEMICAL STORAGE, AND FUEL STORAGE AREAS TO DETERMINE WHETHER APPROPRIATE CONSTRUCTION STANDARDS WERE FOLLOWED. DURING THIS REVIEW THE WELL ISOLATION DISTANCE IS EVALUATED TO ENSURE THE PROPER ISOLATION WAS MAINTAINED. IN THE EVENT A WELL DOES NOT MEET THE MINIMUM ISOLATION DISTANCE AS DEFINED IN RULE OR THE REDUCED ISOLATION DISTANCES OUTLINED IN *PUBLIC WELL ISOLATION DISTANCES CRITERIA FOR REDUCING THE WELL ISOLATION DISTANCE FROM MAJOR SOURCES OF CONTAMINATION*, A SITE SPECIFIC EVALUATION SHALL BE CONDUCTED. THE PURPOSE OF THIS EVALUATION IS TO DETERMINE IF SITE SPECIFIC CONDITIONS PROVIDE ADEQUATE PROTECTION OF THE RESOURCES.

Upon receipt of a request for evaluation of a well not meeting the established reduction criteria:

MDARD shall:

1. Provide a review by the engineering staff of the site specific information and determine whether conditions exist that allow for a site specific reduced isolation distance.
2. Upon the approval by the MDARD engineering staff, the engineers will submit to MDEQ all available site specific information (*Site Specific Well Reduction Review Request*).
3. Work with MDEQ to provide any additional site information to assist MDEQ in their evaluation.

MDEQ shall:

1. Review the information received and consult with MDARD engineering staff on the evaluation.
2. Provide MDARD a written determination (*Site Specific Well Reduction Review Request*) of the well consisting of one of the following options:
 - a. Denied
 - b. Approved
 - c. Approved with site-specific conditions

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Original Effective Date: December 1, 1997	Subject: Aquifer Test Requirements for Public Water Supply Wells		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
Revised Date: April 14, 2004	Division/Office and Program Names: ODWMA-Field Operations Section and Environmental Health Section		
Reformatted Date: January 14, 2013	Number: ODWMA-399-003	Page: 1 of 6	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

The goal of this policy and procedure is to establish standards for the acquisition of information used in implementing sound groundwater resource management practices. The Office of Drinking Water and Municipal Assistance (ODWMA) has established the following requirements and evaluation criteria for yield tests and hydrogeological assessments on wells serving public water supply systems. The requirements for a yield test are based upon widely accepted practices for conducting an aquifer test for the purpose of estimating potential yields from an aquifer and wells, characterizing the groundwater resource, and managing the groundwater resource.

AUTHORITY:

R 325.10807 (Rule 807), R 325.10809 (Rule 809), R 325.10812 (Rule 812), R 325.10813 (Rule 813), R 325.10814 (Rule 814), and R 325.10830 (Rule 830) of the administrative rules adopted under the Safe Drinking Water Act, 1976 PA 399, as amended, covering the location of wells, isolation area modification, location of wells with respect to major sources of potential contamination, studies of hydrogeological conditions by suppliers of water to Type I and Type IIa public water supplies, studies of suppliers of water of Type IIb and Type III public water supplies, and yield or performance testing requirements.

STAKEHOLDER INVOLVEMENT:

This policy and procedure was vetted before the consulting community through a public meeting in 1995. There were no objections to the policy and procedure. Language was added, such as the requirements for obtaining static water elevations and the determination of the groundwater gradient and direction of flow, at the recommendation of the consulting community.

DEFINITIONS:

High Capacity Well: a well or combination of wells that is or will be equipped with a pump of 70 gallons per minute (gpm) or greater capacity intended to serve a Type I public water supply

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system, or a Type II or Type III public water supply system with a pump of 70 gpm or greater capacity where the projected water withdrawal is over 100,000 gallons per day average for any 30 consecutive days.

Hydrogeologic Assessment: a study of hydrogeologic conditions, including a yield test, conducted for the purpose of determining an isolation area or assessing the acceptability of a well location.

Low Capacity Well: a well or combination of wells intended to serve a Type I, Type II, or Type III public water supply system that does not meet the definition of high capacity.

Yield Test: a test completed to determine the long-term production capability and/or drawdown of an aquifer or well.

POLICY:

1. Yield Tests for High Capacity Wells: High capacity wells shall be subject to the requirements of this policy and procedure.
2. Yield Tests for Low Capacity Wells: The requirements of this policy and procedure may apply to a low capacity well where deemed necessary by the ODWMA. Yield tests on low capacity wells may be required to fulfill all or a portion of this policy and procedure as deemed necessary by the ODWMA.
3. Hydrogeological Assessments: Yield tests conducted as part of a hydrogeologic assessment, such as those required under R 325.10830 on a Type I, Type II, or Type III well or a Wellhead Protection Area delineation, shall conform to the requirements of this policy and procedure. Waiver of the requirements for a yield test shall be contingent upon the availability of information on the aquifer necessary to completing the assessment using existing sources of information.
4. Replacement of Well Capacity: The requirements of this policy and procedure may be waived where a well intended to serve an existing Type I, Type II, or Type III public water supply is being constructed for the sole purpose of replacing previously existing capacity. Waiver of the requirements shall be contingent upon the availability of existing information that fulfills the requirements and intent of this policy and procedure.

PROCEDURES:

The purpose of an aquifer test is to define aquifer hydraulic characteristics and determine the ability of the aquifer to yield water. Data from an aquifer test shall be subject to a suitable mathematical analysis to predict the effects of continuous pumping with no recharge and determine a safe withdrawal rate from the aquifer. In certain instances, an aquifer test may be required to assess the effects of well interferences, determine if groundwater recharge or barrier boundaries exist, or assess the aquifer's vulnerability to contamination.

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Observation Well Requirements – Aquifer tests shall be conducted using a minimum of two observation wells. The observation wells may consist of adjacent wells terminated in the same aquifer and not in service during the aquifer test, or wells constructed for the sole purpose of obtaining drawdown measurements during the aquifer test. Observation wells shall be completed in the same aquifer and screened at or near the depth of the production well. If the production well terminates in the bedrock, the observation wells shall terminate in the same bedrock formation at approximately the same depth and exhibit a similar interval of open borehole. It is recommended observation wells be located at distances from the production well one to five times the thickness of the aquifer and at right angles to each other. The observation wells shall be located at different distances from the production well.

Location Information – Locations for all wells at the well site or used in the aquifer test (production well and observation wells) shall be obtained. Locations shall be obtained using a global positioning system and reported as latitude and longitude in degrees-minutes-seconds or in degrees to an accuracy of 0.00001 of a degree.

Water Well Records – Water well records for all wells at the site shall be entered into Wellogic or copies of the water well records transmitted to the ODWMA for entry into Wellogic. The water well records shall include complete and accurate location information, which at a minimum is to include the latitude and longitude of the well, the township name, township number, range number, section number, and county name where the wells are located. (Note: Transmittal of water well records to the ODWMA does not preclude the responsibility on the part of the water well driller to retain a copy and transmit a copy of the water well record to the local health department and the owner of the well in accordance with the Michigan Water Well Construction and Pump Installation Code, Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended, and the administrative rules promulgated thereunder).

Static Water Elevations, Groundwater Gradient, and Direction of Flow – Static water elevations shall be obtained in all wells constructed at the well site or utilized in the aquifer test. Static water elevations shall be provided in feet above mean sea level (ft AMSL) with reference to the National Geodetic Vertical Datum of 1929 or the North American Vertical Datum of 1988. Static water elevations shall be determined by surveying the top-of-casing (ft AMSL), measuring the depth from the top-of-casing to the static water level in the well, and subtracting this depth from the top-of-casing elevation to determine the static water elevation in the wells. All surveyed elevations, depth from the top-of-casing to the static water level, and static water elevations shall be reported to an accuracy of 0.01 feet.

The static water elevations shall be used to determine the groundwater gradient and the direction of groundwater flow. The gradient and direction of groundwater flow shall be determined by "triangulation," at a minimum, on three static water elevations (one from the production well and one each from the two observation wells). Wells may be in such close proximity that obtaining an accurate groundwater gradient and direction of groundwater flow is

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not possible. In such instances the top-of-casing elevation, depth from the top-of-casing to the static water level, and static water elevation shall be provided.

Prior to the Aquifer Test – The collection of background static water levels is required to account for any natural or manmade trends in groundwater level that might impact the outcome of the aquifer test. Before beginning the aquifer test, static water level measurements shall be obtained from the production well and observation wells. Static water level measurements shall be taken at a minimum of one reading every hour for a period of time equal to at least 1/3 of the anticipated length of the aquifer test.

Pumping Rate and Duration – The production well shall be set up and equipped to discharge at or above the desired production rate for the duration of the aquifer test. Provisions shall be made to maintain a constant flow rate from the production well over the course of the aquifer test. Periodic measurement of the flow rate should be made to ensure a constant discharge. Water from the production well shall be discharged in a manner that will not impact water levels in the aquifer or the outcome of the aquifer test. Provisions shall be provided to control or precisely know the time and magnitude of groundwater withdrawals from the aquifer as a result of nearby large capacity wells producing from the same aquifer. Where a production well is completed in a confined aquifer, the duration of the aquifer test shall be a minimum of 24 hours. Where hydrogeologic data suggests the aquifer is unconfined, the duration of the aquifer test shall be a minimum of 72 hours.

Drawdown and Recovery Measurements – During the aquifer test, drawdown measurements shall be recorded in the production well and observation wells to an accuracy of 0.01 feet. Drawdown measurements shall be made in the production well and observation wells, at a minimum, in accordance with the following schedule:

<u>ELAPSED TIME</u>	<u>MEASUREMENT FREQUENCY</u>
0 to 10 minutes	1 per minute
10 to 20 minutes	Every 2 minutes
20 to 60 minutes	Every 5 minutes
60 to 180 minutes	Every 15 minutes
180 to 360 minutes	Every 30 minutes
360 minutes to completion	Every 60 minutes

Upon completion of pumping, measurements of water level recovery shall be obtained from the production and observation wells for a period of time not less than 1/3 the length of the period of pumping. During recovery, measurements shall be made in accordance with the schedule as noted above for drawdown measurements.

The pretest, time-drawdown, and recovery data that is collected shall be provided in both hard copy and digital form to the ODWMA. Where data has been automatically collected in digital form at a frequency greatly in excess of the aforementioned elapsed time and measurement frequency, the data shall be reduced to a reasonable and manageable size and form prior to submittal of the data to the ODWMA.

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Analysis of Data – At a minimum, the aquifer hydraulic characteristics transmissivity and storage coefficient shall be determined employing the methods of Cooper and Jacob (1946) or Theis (1935). More complex methods of analysis, including but not limited to the following, should be used where appropriate to the area hydrogeology and response of the aquifer to the withdrawal of groundwater:

Hantush and Jacob, 1955 – leaky-confined conditions
Hantush, 1960 – leaky-confined conditions
Neuman, 1972 – unconfined conditions and/or delayed yield
Neuman, 1974 – unconfined conditions and partial penetration
Hantush, 1961 – partial penetration
Ferris, et al., 1962 – the presence of boundaries

The analysis of data shall include a prediction of the effects of 100 days pumping at the maximum pumping rate of the permanent pump. The predictions shall include the following:

- Maximum safe withdrawal rate for the production well.
- Projected drawdown in the production well (corrected for well losses where necessary).
- Projected drawdown throughout the aquifer (i.e., distance-drawdown or plan review).

REFERENCES:

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- Ferris, J.G., D.B. Knowles, R.H. Brown, and R.W. Stallman, 1962. *Theory of Aquifer Tests*, Ground-Water Hydraulics, Geological Survey Water-Supply Paper 1536-E, p. 174.
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- Neuman, S.P., 1974. *Effect of partial penetration on flow in unconfined aquifers considering delayed gravity response*, Water Resources Research, Vol. 10, No. 2, pp. 303-312.

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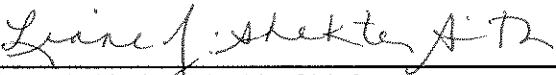
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Theis, C.V., 1935. *The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage*, Transactions of the American Geophysical Union, Vol. 16, pp. 519-524.

OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, Chief
Office of Drinking Water and Municipal Assistance

1/18/2013
Date

Chapter 6 Appendices

Water Quality Standards and Monitoring

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	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: November 24, 1993	Subject: Determination of Ground Water Under the Direct Influence of Surface Water		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
Revised Date:	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
Reformatted Date: January 7, 2013	Number: ODWMA-399-008	Page: 1 of 3	

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INTRODUCTION, PURPOSE, OR ISSUE

Part 8, Ground Water Sources, of the Administrative Rules (Part 8 Rules) promulgated pursuant to the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), addresses requirements for public water systems that utilize groundwater as a source. It is the responsibility of Office of Drinking Water and Municipal Assistance (ODWMA) and local health department staff through approving construction plans, conducting routine surveillance, performing sanitary surveys, and reviewing vulnerability assessments to determine if a groundwater source does not meet these requirements and to make a determination if the source may be groundwater under the direct influence (GWUDI) of surface water. This policy is designed to provide procedures and guidance for staff to use when making such a determination.

AUTHORITY:

Rule 325.10611 of the Act 399, and Administrative Rules

STAKEHOLDER INVOLVEMENT:

This policy was developed by managers of the public water supply supervision program when the drinking water program was located in the Department of Public Health. The primary purpose was to satisfy United States Environmental Protection Agency (USEPA) primacy requirements under the original surface water treatment rules implemented in the early 1990s. At the time, this policy was intended for internal guidance and was formulated prior to any requirement to involve stakeholders in such documents.

DEFINITIONS:

GWUDI water means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH, that closely correlate to climatological or surface water conditions. The DEQ will determine direct influence for individual sources in accordance with this definition and Rule 325.10611(1) and will notify the supply of its determination.

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PROCEDURES:

The following factors will be considered by ODWMA staff when determining whether a groundwater source will need further study:

1. Unsafe microbiological or chemical history of samples collected from a groundwater source. Determine if there have been any disease outbreaks caused by Giardia, Cryptosporidium, or other pathogenic organisms associated with inadequately treated surface water. Determine whether chemical contaminants that are surface water in origin are present.
2. Standard isolation areas that include potential sources of contamination such as storm or sanitary sewers, septic tanks, tile fields and seepage pits, or those isolation areas that are less than the required distances as specified in the Administrative Rules.
3. Location or construction of the well that will allow the entry of surface water into the well (subject to flooding).
4. Hydrogeological conditions that could lead to direct surface influence on the quality of the groundwater such as fractured limestone.
5. Construction of the well that does not meet construction codes as defined by Rule 325.10611(1) and all other applicable well construction requirements in Act 399.
6. Wellhead protection programs where delineation of the capture zone has determined that immediate direct recharge is occurring from surface water.

Any further study will be the responsibility of the water supply with assistance from the ODWMA and may include:

1. A sanitary survey of the groundwater source.
2. Additional monitoring to determine whether the source is considered GWUDI. Parameters to be investigated by the water supplier include pH, conductivity, turbidity, and temperature at some specified frequency. Bacteriological quality and microparticulate analysis for organisms that are associated with surface water over a six-month period of time (or longer) will also be necessary at the source suspected for GWUDI. Such surface water indicators include as a minimum, diatoms, rotifers, algae, etc.
3. USEPA guidance may also be used when developing a monitoring protocol for the purpose of determining GWUDI.
4. Where surface water from a nearby lake, river, or stream is suspected to directly influence a groundwater source, as exhibited by rapid changes in water quality that closely correlate to surface water, additional raw water quality monitoring should be carried out from this surface water and compared to the water quality of the groundwater source.

The first six factors are steps the ODWMA will consider in evaluating the groundwater source. If further study shows the groundwater quality is directly impacted by surface water, the source is considered GWUDI. Source water determined to be GWUDI and wells that do not meet the Part 8 Rules require complete treatment as defined in the Administrative Rules to Act 399.

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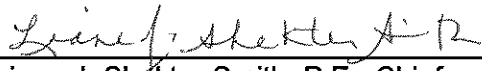
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REFERENCES:

USEPA's Consensus Method for Determining Groundwaters Under the Direct Influence of Surface Water Using Microscopic Particulate Analysis (MPA).

OFFICE CHIEF APPROVAL:

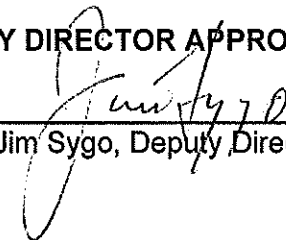


Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

12-28-2012

Date

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

1/7/2013

Date

Bacteria Monitoring Reference Guide for NCWS Serving <1,000 persons per day

Remain on Annual

- Annual site visit in 2017 and every year thereafter
- Clean compliance history in last 12 months

Annual to Quarterly

- Routine monitoring violation

Annual to Monthly

- A triggered L2
- One triggered L1 in each of two consecutive years
- E. coli MCL violation
- Coliform TT violation

Quarterly to Monthly

- A triggered L2
- Two triggered L1 in a rolling 12 month period
- An EC MCL violation
- A TC TT violation
- Two monitoring violations in a rolling 12 month period*
- One monitoring violation and one L1 in a rolling 12 month period*

Quarterly to Annual or Monthly to Annual

- SS or annual site visit in last 12 months
- Free of sanitary defects
- Protected source
- Clean compliance history in last 12 months
- At least one additional enhancement
- *Seasonal supplies cannot be reduced to annual sampling*

Monthly to Quarterly

Must meet all conditions:

- SS or annual site visit in last 12 months
- Free of sanitary defects
- Protected source
- Clean compliance history in last 12 months

NCWS = Noncommunity Water Supply

TC = Total Coliform

EC = E. Coli

SS = Sanitary Survey

TT = Treatment Technique

GWR = Ground Water Rule

L1 = Level 1 Assessment

L2 = Level 2 Assessment

Assessment Triggers

L1: *Completed by the well owner or their representative*

- Two or more TC+ samples in the same month
- Fails to take every required repeat following routine TC+

L2: *Completed by the LHD*

- EC MCL violation
- Second L1 in a rolling 12 month period, unless LHD determines likely reason that the samples that caused the first L1 TT trigger were TC+ and has established that the NCWS has corrected the problem
- L1 triggered in 2 consecutive years for systems on annual

Monitoring Violations (does not include reporting violations)

- Failure to take every required routine or additional routine sample in a compliance period
- Failure to analyze for EC following a routine TC+

Sample Siting Plans

- Complete by March 31, 2016
- Includes routine, repeat, and GWR sampling locations
- Seasonal supplies must sample during their vulnerable period

Clean Compliance History

No EC MCL violations:

- EC+ repeat sample following a TC+ routine
- TC+ repeat following an EC+ routine
- Fails to collect all required repeat samples following an EC+ routine sample
- Fails to test for EC when any repeat is sample is TC+

No TC TT violations:

- Fails to conduct a required L1 or L2
- Fails to take corrective action specified by State
- Seasonal system fails to complete start-up procedures prior to serving water to the public

No Routine Monitoring Violations:

For Transient NCWSs on quarterly or monthly monitoring, the LHD can choose to not count monitoring violations as part of the clean compliance history if the NCWS collected a make-up sample. LHD must still report the monitoring violation(s).*

No coliform treatment technique trigger exceedances:

- Two L1 in rolling 12 month period
- One L2 in rolling 12 month period

*For the purposes of remaining on or qualifying for quarterly monitoring at transient systems only, the local health department may allow a missed sample to be collected by the system immediately the next quarter or month. This make-up sample does not count as the routine sample required for the next quarter or month. The make-up sample must be collected in a different week than the routine sample for that period. The system will still receive a monitoring violation for a missed sample.

Violation Determination Based on Monitoring

Action	Monitoring Violation	E.coli MCL Violation	Assessment Trigger
Fails to collect routine samples	Yes	No	No
Fails to analyze E.coli following a routine TC positive	Yes	No	No
Fails to collect repeat following a routine TC Positive	No	No	L1
Fails to collect all repeat samples following a routine EC positive	No	Yes	L2
Fails to analyze for E.coli when a repeat is TC positive	No	Yes	L2
Fails to collect additional routine samples following a trigger	Yes	No	No

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: Routine Water Sampling Reminder

This letter is regarding your routine frequency analyte water sample needed to meet the requirements of the Michigan Safe Drinking Water Act, PA 399 of 1976.

According to the monitoring requirements for System Name, a analyte sample must be taken during monitoring period. If you have not yet taken the water sample, do so immediately.

Water sample bottles, sampling instructions and report forms are available from this department. Water samples may be sent to any certified drinking water laboratory for testing; however, it is the owner/operator's responsibility to report the results to this department.

analyte samples need to be at or below a specific temperature when received at the lab. Samples that do not meet the temperature requirement cannot be accepted for compliance purposes. Samples received within 24 hours after collection will be accepted if they are packed in ice. Samples not on ice will not be accepted for compliance. If you see a comment on your sample result indicating temperature requirements were not met, a new sample should be collected as soon as possible to avoid a monitoring violation.

Make sure to write your WSSN (Water Supply Serial Number) on the sample form. You may not be credited for sampling results if you do not include your WSSN on your laboratory form.

Failure to collect a water sample is a violation of the Michigan Safe Drinking Water Act and may result in further enforcement including civil fines.

If you have any questions, please contact this office at .

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Total Coliform Quarterly Monitoring Violation at System Name
Water Supply Serial Number (WSSN) Source ID

Dear :

Our records show that System Name did not submit the required quarterly total coliform sample, specifically for monitoring period.

The above sample should have been submitted prior to date. To remain on quarterly monitoring, a make-up sample must be collected immediately. Failure to collect a make-up sample will result in an increase to monthly monitoring. The make-up sample does not fulfill your requirement to collect your routine quarterly total coliform sample for this quarter. The make-up sample and routine quarterly sample must be collected in different weeks. Send in the sample immediately to avoid further monitoring violations, increased monitoring, and potential monetary fines.

A monitoring violation requires public posting be made to notify users of the failure of the public water supply to collect designated samples. **The monitoring violation public notice is enclosed.** Posting of the notice shall continue until sample results are received to comply with the monitoring period, or for a period of 7 days, whichever is greater. Please sign and date one of the enclosed monitoring violation notices and return it to this office at the above address. This will be a permanent part of your file.

This violation has been reported to the Federal Environmental Protection Agency. The Safe Drinking Water Act authorizes this department to assess a civil fine of \$200.00 for each failure to sample and report results. Failure to have the Public Notice posted in your facility (and a copy returned to this Department) can lead to the same administrative actions.

When submitting samples, please remember to include your water supply serial number (WSSN). If you choose to use a private laboratory, you must submit the sample results to me directly.

If you did collect the required sample(s) and have a copy of the lab results, contact this office as soon as possible at . This will allow me to change your status to "in compliance" and rescind this notice. Thank you for your cooperation.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Monitoring Violation at System Name, Water Supply Serial Number (WSSN) WSSN

Dear Owner/Operator:

Our records show that System Name, WSSN, Source Source ID, did not submit the following water sample(s) prior to the required "collect-by" date during the monitoring period:

LHD, delete the necessary analytes.

Nitrate

Cyanide

VOC

Lead and Copper

Samples taken in June, July, August, or September count towards compliance monitoring for systems on annual or 3-year monitoring as per Michigan's Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), *Rule 325.10710a (4)(d)(iv)*.

Metals

SOC

Arsenic

Disinfection Byproducts (DBP)

PFAS

Monitoring Period:

If you collected the above sample(s) during the specified monitoring period, please forward a copy of the laboratory (lab) results to my attention. If you have not already collected your sample(s), collect them immediately to avoid further monitoring violations and potential monetary fines.

A monitoring violation requires public posting be made to notify users of the failure of the public water supply to collect designated samples. The monitoring violation public notice is enclosed. Posting of the notice shall continue until sample results are received, or for a period of seven (7) days, whichever is greater.

When submitting samples, please **remember to include your WSSN**. Your WSSN is shown in the subject line at the top of this notice.

If you did collect the required sample(s) and have a copy of the lab results, contact this office as soon as possible at Phone or Email. This will allow me to change your status to "in compliance" and rescind this notice.

LHD: Remove this section if you do not intend to issue a fine.

This violation has been reported to the United States Environmental Protection Agency. The Safe Drinking Water Act authorizes this Department to assess a civil fine of \$200.00 for each failure to sample and report results. Failure to post this Public Notice in your facility and return a copy to this Department can lead to the same administrative actions.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Total Coliform Monitoring Violation at Supply, Water Supply Serial Number

Dear Owner/Operator:

Our records show that System, WSSN Source ID did not submit the required frequency total coliform sample, specifically for dates.

If you collected the above sample(s) during the specified monitoring period, forward me a copy of the lab results. If you have not, collect the sample(s) immediately to avoid further monitoring violations and potential monetary fines. *LHD reminder: Nontransient system will trigger into monthly.*

A monitoring violation requires public posting be made to notify users of the failure of the public water supply to collect designated samples. The monitoring violation public notice is enclosed. Posting of the notice shall continue until sample results are received to comply with the monitoring period, or for a period of 7 days, whichever is greater. Sign and date the enclosed monitoring violation notices and return a signed copy to this office.

When submitting samples, please remember to include your water supply serial number (WSSN). If you choose to use a private laboratory, you must submit the sample results to me directly.

If you did collect the required sample(s) and have a copy of the lab results, contact this office as soon as possible at phone or email. This will allow me to change your status to "in compliance" and rescind this notice.

LHD: Remove this section if you do not intend to issue a fine.

This violation has been reported to the US Environmental Protection Agency. The Safe Drinking Water Act authorizes this department to assess a civil fine of \$200.00 for each failure to sample and report results. Failure to have the Public Notice posted in your facility (and a copy returned to this Department) can lead to the same administrative actions.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Reporting Violation at System Name
WSSN

Dear _____ :

System Name has violated the reporting requirements of the Michigan Safe Drinking Act (SDWA), 1976 PA 399, and the rules as amended. The reason(s) for the violation is below:

LHD: Use for late sample submittal of results

System Name collected water sample(s) but failed to submit water sample results to the LHD in a timely manner. Water sample results must be submitted to the LHD within 10 days after the end of the period in which the sample is due.

LHD: Use for MORs

System Name failed to submit a Monthly Operation Report (MOR) for the month of _____. MORs must be submitted to the LHD by no later than the 30th of the month following the monthly monitoring period (10th of the month for all MORs with compliance data).

System Name shall submit the outstanding signed and completed documents to this office as soon as possible.

LHD: Remove this paragraph if you do not intend to assess a fine

This violation has been reported to the Federal Environmental Protection Agency. The Safe Drinking Water Act authorizes this department to assess a civil fine of \$200.00 for each failure to report results.

If you have any questions, please contact me at _____.

CC: Certified Drinking Water Operator

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: Reduced Monitoring for Total Coliform Bacteria at System Name
Water Supply Serial Number (WSSN) WSSN

Dear Owner/Operator:

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, your water sampling requirements for coliform bacteria have been reduced for System Name.

Specifically, your monitoring is being reduced from quarterly to annual. It has been determined that your water supply has met all of the following requirements:

LHD, choose the set of requirements below and delete the other two that do not apply. And delete this statement

Quarterly to Annual Monitoring Requirements

1. Sanitary survey or annual site visit in last 12 months
2. Free of sanitary defects
3. Protected source
4. Clean compliance history in last 12 months
5. At least one additional enhancement

Monthly to Quarterly Monitoring Requirements

1. Sanitary survey or annual site visit in last 12 months
2. Free of sanitary defects
3. Protected source
4. Clean compliance history for 12 months

Monthly to Annual Monitoring Requirements

1. Sanitary survey or annual site visit in last 12 months
2. Free of sanitary defects
3. Protected source
4. Clean compliance history in last 12 months
5. At least one additional enhancement

The following is the new coliform bacteria frequency for System Name

Frequency: Annual or Quarterly (number of samples sample per quarter or year).

Next sample Due:

The approved routine sampling location is .

If you have any questions, please contact me at .

Today

PWS Name

Attn: Contact FirstName LastName

Address

Address 2

City, State Zip

RE: Annual Site Visit for PWS Name
WSSN PWSID

Dear Contact First Name Contact Last Name:

Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, annual site visits equivalent to a Level 2 Assessment (LV2) are required to qualify for a reduction in bacteria sample to annual. The standard monitoring for water systems that serve less than 1000 persons per day is quarterly (4 times per year).

A site visit was completed on Visit Date by LHD. The purpose of this visit was to review and identify:

- Events that could affect drinking water quality or indicate that drinking water quality was impaired.
- Changes in water system maintenance and operation.
- Source and treatment considerations that impact water quality.
- Existing water quality monitoring data, including sampling sites and protocol.

During the visit water samples were taken to check for bacteria and nitrate. The results of those samples indicate satisfactory water quality at the time of the visit.

As a result of the assessment, and the water sample results, PWS Name has been approved for annual water sampling for the calendar year.

Site visits will be required every year to remain on an annual bacteria water sampling schedule. Additional water sampling for coliform bacteria is not required unless the water system is changed or damaged. If you plan on making any changes to your water system please contact this office as soon as possible.

If you have any questions, please contact me at Inspector Phone or Inspector Email.

Sincerely,



Inspector First Name Last Name
Title

Annual Site Visit (Level 2 Equivalent)

Name of Water System: PWS Name, WSSN: WSSN

Date of Site Visit: Visit Date

Parties Present During Assessment:

The assistance of water system representatives mentioned below was very helpful and greatly appreciated.

Each person listed below will receive a copy of this letter.

Name	Organization
Name	Water System

Conclusions

Issue	Description and Corrective Action
Long Question	Comments
There were no issues identified. System qualifies to remain on annual bacteria monitoring.	

Actions required to be completed by **Compliance Date**

Monitoring Schedule

Do not change your monitoring schedule unless notified in writing.

Analyte	Schedule	Sample Location
Routine Schedule	Frequency	Location Code
Note to LHD: This table should not be blank.		

Sample Points

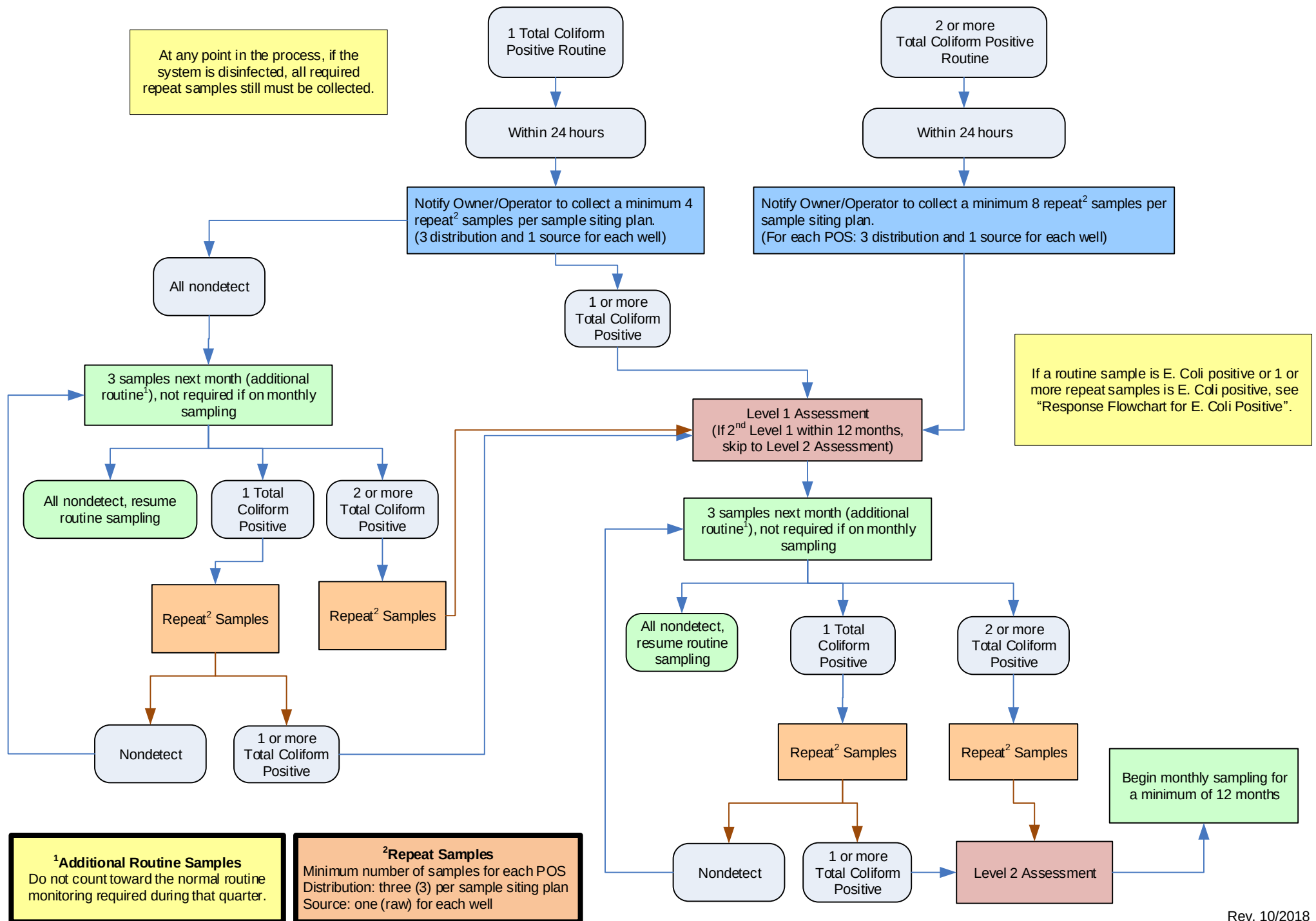
Sample Point Code	Exact Location	Sample site to satisfy which rule		
Location Code	Location Name	Note 1	Note 2	Note 3
Note to LHD: This table should not be blank.				

Site Visit History

Reason	Date of visit
Reason	Date
There have been no recorded site visits in the last 5 years.	

Revised Total Coliform Rule Response Flowchart for Total Coliform Positive

At any point in the process, if the system is disinfected, all required repeat samples still must be collected.



Procedures for Positive Total Coliform Follow-up at Noncommunity Water Supplies

Nothing in this document should be construed as transferring responsibility from the supplier of water to the DEQ, local health department, or another authorized agency.

Routine Total Coliform Positive Sample

Repeat sampling (in accordance with the sample siting plan) is required by the owner/operator within 24 hours of notification of a total coliform positive result. Water system must be notified of this requirement by certified laboratories. Staff should reiterate the requirement for the owner/operator to collect 4 repeat samples within 24 hours of being notified of the positive result and outline sampling locations and protocol. This can be verbal or written and be documented. This minimum response is not intended to limit the ability of regulatory staff to take additional action if they believe it necessary to protect public health.

Repeat Total Coliform Positive Sample

Precautionary measures – It is recommended that an approved alternate source of water (typically bottled water) be provided by the owner for potable use.

Investigation/corrective action – The owner is responsible for conducting a Level 1 Assessment (LV1) while inspecting their water supply. The purpose of the assessment is to look for sanitary defects that could provide a pathway for entry of microbial contamination into the distribution system. A timeline to correct any sanitary defects shall be determined.

Corrective action should include chlorination of the water well and/or distribution system. This must be performed by a Michigan Registered Water Well Drilling Contractor.

Following the chlorination process, two (2) total coliform samples collected 24 hours apart are required. Details including sample results are to be submitted on the LV1 form.

Site visit – It is recommended that the local health department make a site visit to help the water supply owner/operator determine sanitary defects and corrective action

Potential Imminent Health Hazard

Nothing in this recommended procedure limits the ability of an investigator to take more immediate or stringent action to protect public health based upon information or observation of conditions of an imminent health hazard. Actions could involve immediate precautionary measures (bottled water), or in severe cases requesting building closure, while repeat samples are being collected, and the investigation continues.

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: Positive Total Coliform Water Sample Result at Supply Name
Water Supply Serial Number (WSSN)

Dear Owner/Operator:

A water sample was collected from your noncommunity water supply serving 1000 or fewer people per day on date. The sample tested positive for coliform bacteria. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, you must collect repeat samples within 24 hours of notification of unsatisfactory sample results.

Repeat samples must be collected at locations designated on your sample siting plan including:

- one from the same tap as the initial positive
- two from designated sampling locations in the distribution system
- one from the raw water sample tap for each well that was in use at the time of the routine sample

LHD: Delete the following paragraph if supply does not inject chlorine. For nontransient supplies, a chlorine residual reading must be collected at the same time and location as each bacteria sample. Record residuals on your Monthly Operation Report (MOR).

If you have not re-sampled as described above, do so immediately. If needed, contact this office to review sample collection techniques and locations. Until safe samples are obtained, precautionary measures, such as providing bottled water, are highly encouraged.

Failure to collect all repeat samples in a timely manner will result in a Level 1 or Level 2 Assessment and may result in increased monitoring.

To ensure water results are linked to this supply, check that your laboratory forms are fully completed, including collection date, time, sample point ID, and WSSN. All coliform bacteria samples must be tested by the laboratory within 30 hours of collection.

In Month, Year, three (3) additional bacteriological samples will be required. Further testing requirements will be based on the results of the repeat samples.

If you have any questions, please contact me at .

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: Positive Total Coliform Water Sample Result at Supply Name
Water Supply Serial Number (WSSN)

Dear Owner/Operator:

A water sample(s) was collected from your noncommunity water supply serving 1000 or greater people per day on date. The sample(s) tested positive for coliform bacteria. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, you must collect repeat samples for each positive routine sample within 24 hours of notification of unsatisfactory sample results.

Repeat samples must be collected at locations designated on your sample siting plan including:

- one from the same tap as the initial positive
- two from designated sampling locations in the distribution system
- one from the raw water sample tap from each well that was running at the time of the routine sample

LHD: Delete the following paragraph if supply does not inject chlorine. For nontransient supplies, a chlorine residual reading must be collected at the same time and location as each bacteria sample. Record residuals on your Monthly Operation Report (MOR).

If you have not re-sampled as described above, do so immediately. If needed, contact this office to review sample collection techniques and locations. Until safe samples are obtained, precautionary measures, such as providing bottled water, are highly encouraged.

Failure to collect all repeat samples in a timely manner will result in a Level 1 or Level 2 Assessment.

To ensure water results are linked to this supply, check that your laboratory forms are fully completed, including: collection date, time, sample point ID, and WSSN. All coliform bacteria samples must be tested by the laboratory within 30 hours of collection.

If you have any questions, please contact me at .

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Recent Positive Coliform Bacteria Resolution for System Name
WSSN

Dear ,

The recent coliform bacteria issue has been resolved and the water supply can be taken off “Precautionary Measures”. The results of the repeat coliform bacteria water samples collected on date, were reported as “not detected”.

Next month, or prior to date, three (3) coliform bacteria water samples must be collected as required by the Revised Total Coliform Rules of the Safe Drinking Water Act (SDWA). These three samples are to be marked “*routine*” samples on the laboratory analysis sheet. The sample locations for these samples shall be drinking water fixtures. If System Name does not have three different drinking water fixtures, the samples must be collected on different days. Samples should be collected from describe locations.

Please consider this letter as notification to collect the required three (3) Coliform bacteria water samples in Month.

If all three “routine” sample results are found to be “non-detect” for Coliform bacteria, the minimum sampling frequency will remain quarterly. If one or more sample results is positive, repeat samples shall be collected for each total coliform positive result following the sample siting plan.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Failure to Collect Repeat Total Coliform Water Samples at System Name
Water Supply Serial Number (WSSN)

Dear _____ :

On date a total coliform sample was collected at System Name and was reported as positive for total coliform (or e. coli). LHD notified your facility of the need to collect repeat samples within 24 hours or other predetermined time frame. Our records show that all required repeat coliform bacteria water samples were not collected in the required time as per the Michigan Safe Drinking Water Act. The failure to collect the repeat bacteriologic samples causes doubt as to the safety of the water supply.

System Name now must complete a Level 1 Assessment (LV1), and do the following:

1. Collect the repeat bacteriologic samples as per the sample siting plan.
2. Review and complete the enclosed the LV1 form while inspecting your water supply.
3. Instructions for completing a LV1 can be found on the back of the form. Further assistance in completing the form can be provided by contacting _____.
4. Describe sanitary defects found, corrective actions completed, and a proposed timetable for any corrective actions to be completed. The LV1 may also indicate that no sanitary defects were found.
5. Submit the completed LV1 no later than Date/ 30 days from date of notification.

Upon receipt of the LV1, LHD will review it to ensure that the assessment is sufficient, and any corrective actions are adequate. Failure to complete the LV1 and form will result in issuance of a Coliform Treatment Technique violation and increased monitoring.

Precautionary measures, such as providing bottled water, are highly encouraged and should remain in effect until the 4 repeat coliform bacteria samples are safe. In Month, Year three (3) additional routine bacteriological samples will be required.

If you have any questions, please contact me at _____.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Monitoring Violation at System Name, Water Supply Serial Number (WSSN) WSSN

Dear Owner/Operator:

Our records show that System Name, WSSN, did not submit the triggered source water sample from each well following a routine distribution system coliform detection. The routine coliform sample was collected on .

A monitoring violation requires public posting be made to notify users of the failure of the public water supply to collect designated samples. The monitoring violation public notice is enclosed. Posting of the notice shall continue until sample results are received, or for a period of seven (7) days, whichever is greater.

When submitting samples, please remember to include your WSSN. Your WSSN is shown in the subject line at the top of this notice.

If you did collect the required sample(s) and have a copy of the lab results, contact this office as soon as possible at Phone or Email. This will allow me to change your status to "in compliance" and rescind this notice.

LHD: Remove this section if you do not intend to issue a fine.

This violation has been reported to the United States Environmental Protection Agency. The Safe Drinking Water Act authorizes this Department to assess a civil fine of \$200.00 for each failure to sample and report results. Failure to post this Public Notice in your facility and return a copy to this Department can lead to the same administrative actions.



Level 1 Assessment Form for Noncommunity Public Water Supplies

Issued under authority of the Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq., and its Administrative Rules (Act 399).
Failure to submit certification is a violation of Act 399 and may subject the water supply to enforcement actions.

This assessment is intended to review general water system infrastructure and operating and sampling protocols. This form should be completed by a knowledgeable representative of the water system. **To avoid a violation, this form must be completed and returned to the local health department (LHD) no later than _____.**

Noncommunity Water System Name:		Water Supply Serial Number:	Date Completed:	Form required in response to: Total Coliform Positive(s): ☐	
Name & Title of Person Completing Onsite Assessment:		Telephone Number:	E-mail Address:	Failure to Collect Repeat Samples After Initial Routine Positive: ☐	
Issues			Check	Description (attach additional sheets if necessary)	
1.	Has anything unusual occurred prior to sample collection? Loss of pressure, power outage, operation and maintenance activities, vandalism, visible indicators of unsanitary conditions, heavy rainfall, etc.		Yes ☐ No ☐	Describe all issues identified along with the approximate date of the occurrence (e.g., replaced well pump on May 1, samples taken next day, results were positive for total coliform, etc.).	
2.	Have there been any recent changes to the water system? New plumbing installed, pump replacement, pressure tank replacement, treatment system installed, operational changes, issues with, or new potential sources of, contamination, etc.		Yes ☐ No ☐		
3.	Sampling Site/Protocol: Sample tap damaged or inaccessible, improper sampling techniques, improper sample location, failure to collect repeat samples after initial routine positive, etc.		Yes ☐ No ☐		
4.	Well: Damaged, loose, or missing well cap, vent screen, conduit; problem with wellhead; evidence of flooding, etc.		Yes ☐ No ☐		
5.	Treatment Process (if applicable): Interruptions, chemical refill overdue, filter change due, incorrect chemical solution concentration, dosage adjustment needed, other operations and maintenance issues, etc.		Yes ☐ No ☐	Corrective Action (attach additional sheets if necessary) ☐ Supply will be following Level 1 Corrective Action Plan (CAP) provided by the local health department (LHD); e.g., chlorination, flushing, sampling, etc., on or before (date): ____.	
6.	Pressure Tank: Recent work performed, pressure tank issues, pump runs more often than normal, etc.		Yes ☐ No ☐	OR	
7.	Distribution System: Plumbing in disrepair, leaking joints, pressure loss, cross connections, dead-end plumbing, frozen pipes, etc.		Yes ☐ No ☐	☐ A detailed CAP proposal and timeline is attached.	
8.	Other: Check applicable box and, if yes, describe event or condition in "Description" box.		Yes ☐ No ☐	OR ☐ No sanitary defect(s) identified – No CAP proposed.	
Local Health Department Use Only ☐ LHD collected assessment information (above) via phone					
Date of Trigger: _____ Date Reviewed: _____ Reviewed By: _____					
☐ CAP Paperwork Complete Date System Notified CAP Approved: _____ ☐ Corrections completed within approved timeline					

Submit to LHD:



Level 1 Assessment Form Guidance

*Issued under authority of the Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq., and its Administrative Rules (Act 399).
Failure to submit certification is a violation of Act 399 and may subject the water supply to enforcement actions.*

Conducting this Level 1 Assessment is intended to protect public health by identifying "sanitary defects" so they can be corrected. Sanitary defects could provide a pathway of entry for microbial contamination into the distribution system. Indicate a failure or indicate imminent failure in a barrier that is already in place. Sampling that indicates the presence of bacteria triggers a Level 1 Assessment. The assessment helps to identify whether one or more sanitary defects are present.

The Level 1 Assessment examines source water, treatment, distribution system, and relevant operational practices. It is performed by someone familiar enough with the system to answer the questions on the assessment form (e.g., owner, certified operator, or LHD).

A Level 1 Assessment must be completed and submitted to the LHD within 30 days of either of the following triggers:

1. The system has two or more total coliform-positive samples in the same month, including repeat samples collected after the end of the month; or
2. The system fails to take every required repeat sample after any single routine total coliform-positive sample.

Some of the common causes of coliform detections in the water supply system are:

- Loss of pressure due to power outage or electrical work
- Maintenance performed on the distribution system (e.g., replace burst pipe and failure to disinfect afterwards)
- Pressure tank or pump replaced
- Reduced isolation distances to sources of contamination
- Treatment (water softener) system installed or different treatment chemicals/filters purchased
- Sample collected from wrong location
- Unapproved or loose-fitting well cap and electrical conduit
- Water ponding near the wellhead
- Plumbing leaks
- Sample tap in poor condition
- Cross connections (connection between the drinking water supply and a potential source of contamination)
- Biofilm buildup in the system
- Dead-end plumbing (places where water could stagnate)

If the water supply failed to collect repeat samples after any single routine total coliform-positive sample, the supply **must** collect the repeat samples immediately and submit the results to the LHD.

The assessment form must be completed and submitted to the LHD within 30 days of the date of the trigger (Item 1 or 2 above). A CAP, including a timeline, must be submitted to the LHD for approval if a sanitary defect was identified.

Today

PWS Name

Attn: Contact FirstName LastName

Address

Address 2

City, State Zip

RE: Level 2 Assessment for PWS Name
WSSN PWSID

Dear Contact First Name Contact Last Name:

A water sample from PWS Name collected on _____ was positive for total coliform bacteria. Repeat and triggered source water samples were collected on _____, and _____ of these samples were positive for total coliform bacteria. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, this resulted in requiring a Level 2 Assessment (LV2) of the water supply. A LV2 was completed on Visit Date by LHD.

The purpose of a LV2 is to identify sanitary defects, establish corrective actions, and propose a timetable for any corrective actions. Any sanitary defects that are identified in the LV2 should be corrected as soon as possible to protect public health. Corrective actions are the key to maintaining or restoring the integrity of the distribution system.

After any corrections we recommend the PWS Name well and distribution system be chlorinated by a registered well driller as soon as possible. Following chlorination, two ND coliform samples collected at least 24 hours apart must be obtained before the water supply is considered safe for consumption.

Submit water sample results to this office at _____. Until samples are received by this office, continue precautionary measures as directed.

If you have any questions, please contact me at Inspector Phone or Inspector Email.

Sincerely,



Inspector First Name Last Name
Title

Level 2 Assessment for Noncommunity Public Water Supplies

Name of Water System: PWS Name, WSSN: WSSN

Date of Trigger:

Date of Onsite Assessment: Visit Date

Parties Present During Assessment:

The assistance of water system representatives mentioned below was very helpful and greatly appreciated. Each person listed below will receive a copy of this letter.

Name	Organization
Name	Water System

Level 2 Assessment in response to (check one):

E. coli MCL: ☐

2nd Level 1 in 12 months: ☐

2nd Level 1 in 2 years (annual monitoring): ☐

Issue	Description and Corrective Action	Corresponding Attachment ID Number
Long Question	Comments	ID

Attachment ID: ID

Description

End of attachments.

Conclusions:

- ☐ Sanitary defect(s) were found (see above).
- ☐ Issues were found (see above).
- ☐ No obvious deficiencies or issues were identified.

The following Corrective Action Plan (CAP) and/or action(s) are now required:

- ☐ CAP – Disinfect the water supply system, flush the system, and collect two samples 24 hours apart.
- ☐ CAP – Repair/replace the following:
- ☐ CAP – Other:

Actions required to be completed by **Compliance Date**

Monitoring Schedule

As a result of triggering a level 2 assessment, the monitoring frequency for bacteria is set to monthly for a minimum of 12 months of operation. A reduction in monitoring will be evaluated by LHD after 12 consecutive months of compliance. Do not change your monitoring schedule unless notified in writing.

Analyte	Schedule	Sample Location
Routine Schedule	Frequency	Location Code
Note to LHD: This table should not be blank.		

Site Visit History

Reason	Date of visit
Reason	Date
There have been no recorded site visits in the last 5 years.	

Corrective Action Plan in Response to Level 1 or 2 Assessment

Sanitary defects that are identified during a Level 1 or Level 2 Assessment shall be corrected as soon as possible to protect public health. Corrective actions are the key to maintaining or restoring the integrity of the distribution system. A public water supply (PWS) must complete corrective actions within the timeframe approved by the Local Health Department.

Noncommunity Water System Name:		WSSN:	Date of Trigger:	Date of Onsite Assessment:
Name of Person Submitting Corrective Action Plan:	Owner/Operator (if different than Submitter):		<u>Corrective Action Plan in Response to Sanitary Defect Found During:</u> ☐ Level 1 Assessment ☐ Level 2 Assessment	

A *sanitary defect* is a defect that could provide a pathway of entry for microbial contamination. Sanitary defects include, but are not limited to, the following: (check any that apply)

☐ Failure to disinfect (or improper disinfection) after maintenance work in the distribution system	☐ Unprotected Cross connections	☐ Contaminated sampling taps
☐ Biofilm accumulation in the distribution system	☐ Water line breaks	☐ Loss of system pressure
	☐ Inadequate disinfectant residuals	☐ Other _____

The PWS must correct all sanitary defects found during the assessment. Sanitary defects and corrective actions must be described on the assessment form. The PWS may submit this form along with a timetable for any corrective actions not already completed. The type of corrective action performed will depend on the potential cause of contamination.

Proposed Date for Intended Action	Common Corrective Action(s)	Description of Action(s) Provide Additional Pages as Needed
	Disinfection of the water well by a registered water well driller	
	Flushing the system	
	Replacement/repair of distribution system components	
	Replacement/repair of pressure tank	
	Elimination of dead end water lines	
	Treatment system maintenance/repair	
	Implementation or upgrade of a cross connection control program	
	Use of proper sampling locations and proper sampling protocols	
	Development and Implementation of an Operations/maintenance Plan	
	Upgrading water well/drilling a new well	

Facility:		WSSN:	
Contact person:		Phone:	
Monitoring frequency: ☐ Annual ☐ Quarterly ☐ Monthly ☐ Other			
Date of initial POS:		Location of initial POS:	
Facility notified of initial POS: ☐ Letter ☐ Phone ☐ Other		Sample ID of initial POS:	
Date(s) of repeat samples:		Number of repeat samples:	
Sampling locations appropriate: ☐ Yes ☐ No			
1 sample at raw water tap: ☐ Yes ☐ No		GWR Violation form sent: ☐ Yes ☐ No ☐ NA	
Results of repeat samples: _____ND _____TC POS _____EC POS			
EC MCL? ☐ Yes ☐ No			
Level 1 Assessment conducted (if 1 or more repeat sample TCPOS): ☐ Yes ☐ No ☐ NA			
Level 1 Assessment entered into SDWIS: ☐ Yes ☐ No ☐ NA			
Level 2 Assessment conducted (EC MCL, 2 LV1 within 12 mo, 2 consecutive yrs): ☐ Yes ☐ No ☐ NA			
Level 2 Assessment completed in SWIFT: ☐ Yes ☐ No ☐ NA			
Repairs made: ☐ Yes ☐ No		Supply chlorinated: ☐ Yes ☐ No Chlorinated by:	
Minimum of 2 consecutive coliform ND samples: ☐ Yes ☐ No			
Date(s) of samples:			
Three routine samples collected following month: ☐ Yes ☐ No			
Results of routine samples: _____ND _____TC POS _____EC POS			
Routine samples waived: ☐ Yes ☐ No		Waiver form completed: ☐ Yes ☐ No ☐ NA	
Monitoring frequency increased: ☐ Yes ☐ No ☐ NA			
Documented in file: ☐ Yes ☐ No			
Comments:			
If applicable			
SIA Date:	SIE Date:	SIF Date:	SOX Date:

POSITIVE COLIFORM BACTERIA TROUBLESHOOTING CHECKLIST FOR WELLS

WELL OWNER/ADDRESS	CONTRACTOR	DATE	WELLOGIC WELL ID

WELL CONSTRUCTION		NOTES
Is there a well record? Casing diameter _____ Casing material _____ Age _____	☐ yes ☐ no	
Is this a newly drilled well?	☐ new ☐ replacement	
Was the development of the well sufficient (method, time, etc.)?	☐ yes ☐ no ☐ unknown	
Was filter pack installed?	☐ yes ☐ no	
Was the filter pack disinfected?	☐ yes ☐ no ☐ NA	
Was the entire service line replaced?	☐ yes ☐ no	
Was the pressure tank replaced?	☐ yes ☐ no	
Was the old well plugged?	☐ yes ☐ no ☐ NA	
Does the well terminate in drift or rock?	☐ drift ☐ rock	
Was the well record reviewed thoroughly?	☐ yes ☐ no	
Are there geologic conditions of note (Karst, fractures, etc.) in the area?	☐ yes ☐ no	
Is the wellhead secure (casing, cap, vent, conduit)?	☐ yes ☐ no	
DISINFECTION		NOTES
Was the well flushed properly prior to disinfection to remove interfering substances?	☐ yes ☐ no	
Who disinfected the well?	☐ contractor ☐ well owner	
What disinfection method was used (bulk displacement or simple disinfection)?	☐ bulk ☐ simple	
If bulk displacement, was the method on page 28-33 of Disinfection Manual followed?	☐ yes ☐ no	
Was the chlorine solution pH adjusted?	☐ yes	

	☐ no	
What type of chlorine product was used?	☐ liquid ☐ tablets ☐ granular	
What chlorine concentration was used?	_____ PPM	
If a bedrock well, was the chlorine solution <u>pumped</u> to the bottom of the well?	☐ yes ☐ no ☐ NA	
Was the chlorine solution run to each tap (chlorine smell)?	☐ yes ☐ no	
How long was the contact time (no water use)?	_____ Hours	
Was the well flushed for several hours after the chlorine was flushed out of the system?	☐ yes ☐ no	
Did the contractor consult the Disinfection Manual?	☐ yes ☐ no	
SAMPLING		NOTES
Who collected the samples?	☐ contractor ☐ well owner ☐ LHD	
Where were samples taken?	☐ sample tap ☐ kitchen sink ☐ wellhead ☐ other	
Was the sampling faucet clean and in good repair?	☐ yes ☐ no	
Did the water run for a minimum of 5 minutes prior to taking the sample?	☐ yes ☐ no	
Are there water treatment devices or filters on the system?	☐ yes ☐ no	
Were treatment devices and filters bypassed?	☐ yes ☐ no ☐ NA	
Is the plumbing in good condition (no leaks or corrosion)?	☐ yes ☐ no	
NOTES		

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Repeat Total Coliform Positive Water Sample Result at System Name
Water Supply Serial Number (WSSN)

Dear _____ :

Water samples from the above listed water supply were collected on date and were positive for total coliform bacteria. Repeat samples were collected on date, and at least one of these samples was positive for total coliform bacteria. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, a Level 1 Assessment (LV1) is required, and you must now do the following:

- Review and complete the enclosed the LV1 while inspecting your water supply. Instructions for completing a LV1 can be found on the back of the form. Further assistance in completing the form can be provided by contacting _____.
- Describe sanitary defects found, corrective actions completed, and a proposed timetable for any corrective actions to be completed. The LV1 may also indicate that no sanitary defects were found.
 - o A corrective action plan should include chlorination of the water well and/or distribution system. This must be performed by a Michigan Registered Water Well Drilling Contractor. We recommend the displacement method for chlorinating the well (200 ppm concentration) with at least five (5) times the casing volume pumped into the well. It is important that the water not be used during this process. The following day the chlorine is flushed from the system. Samples for total coliform shall be collected 24 hours apart. Details, including sample results are to be submitted on the LV1.
- Submit the completed LV1 no later than Date/ 30 days from date of notification.
- In Month, Year , three (3) additional bacteriological samples will be required. The samples can be collected on the same day only if at 3 different drinking water taps.

Upon receipt of the LV1, LHD will review it to ensure that the assessment is sufficient, and any corrective actions are adequate. Failure to complete the LV1 will result in issuance of a Coliform Treatment Technique violation and increased monitoring. Precautionary measures, such as providing bottled water, are highly encouraged until non detect samples are obtained.

If you have any questions, please contact me at _____.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Level 2 Assessment at System Name
Water Supply Serial Number (WSSN)

Dear :

Water samples from System Name were collected on date were positive for total coliform bacteria. Repeat samples were collected on date, and at least one of these samples was positive for total coliform bacteria. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, this resulted in requiring a Level 1 Assessment (LV1). However, since this is the second LV1 within a 12 month period or in 2 consecutive years, a Level 2 Assessment (LV2) conducted by the LHD is now required.

The purpose of the LV2 is to identify sanitary defects, establish corrective actions, and propose a timetable for any corrective actions. The LV2 may also indicate that no sanitary defects were found.

As the result of the LV2, the monitoring frequency for this facility will be increased to monthly sampling starting Month, Year .

I will contact you to schedule the LV2. If you have any questions, please contact me at .

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: Increased Monitoring for Total Coliform Bacteria at System Name
Water Supply Serial Number (WSSN) Source ID

Dear :

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, your water sampling requirements for coliform bacteria have been increased for System Name.

Specifically, your monitoring is being increased from annually to quarterly or quarterly to monthly for the following reason(s):

LHD, choose the set of requirements below and delete the other two that do not apply. And delete this statement

Annual to Quarterly Monitoring Requirements

☐ Routine monitoring violation

Annual to Monthly Monitoring Requirements

☐ A Level 2 assessment

☐ One Level 1 assessment in each of two consecutive years

☐ E. coli Maximum Contaminant Level (MCL) violation

☐ Total Coliform Treatment Technique violation

Quarterly to Monthly Monitoring Requirements

☐ A Level 2 assessment

☐ Two Level 1 assessments in a rolling 12-month period

☐ Level 1 assessment and Monitoring Violation in a rolling 12-month period

☐ Two Monitoring Violations in a rolling 12-month period

☐ Total Coliform Treatment Technique violation

☐ An E. Coli MCL violation

The following is the new coliform bacteria frequency for System Name

Frequency: Monthly or Quarterly (number of samples sample per quarter or month).

Next sample Due:

The approved routine sampling location is .

If you have any questions, please contact me at .

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Reduced Monitoring for Coliform Bacteria Water Supply, WSSN WSSN

Dear _____ :

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, Water Supply water sampling requirements for coliform bacteria have been reduced from _____ to _____.

The monitoring is being reduced based upon the determination that Water Supply has met the following requirements:

1. Sanitary survey or annual site visit in last 12 months
2. Free of sanitary defects
3. Protected source
4. Clean compliance history for 12 months
5. At least one additional enhancement will include example: no sanitary sewers nor storm drains within 90'

The following is the new coliform bacteria frequency for _____ :

Coliform (bacteriologic) – 1 sample frequency

Next sample Due: date

The approved sampling location is: routine sample location

If you have any questions regarding these changes, please feel free to contact me at _____.

Investigation and Correction of Coliform Contamination Problems

This document is intended to help systematically investigate the causes and correct the problem of coliform positive sample results. Starting with a specific plan will help eliminate ineffective and time-consuming mistakes.

What do we do when the initial positive sample is collected? The following is a list of helpful questions to ask the owner/operator.

What is the past sampling history of the well?

The sampling history may show recurring coliform problems in the well.

Who collected the sample?

If possible, talk specifically to the person who collected the sample.

How was the sample collected?

Questions to ask include did the sampler touch the sampling fixture, inside of bottle or cap, did her or she let the water run-preferably until the pump was running, etc.

Where was the sample collected?

Samples should be collected from a fixture that is clean and in good repair. Poor sampling locations are swivel faucets, slop sinks, hoses and hose bibs, restroom sinks, and yard hydrants.

Is the new tight fitting/vented well cap in use, or is it the old overlapping style?

Insect infestation problems from the old style well cap is a common contamination problem.

Are there significant construction deficiencies with the well?

A well is likely to yield positive coliform results if there are construction deficiencies, e.g., a well in a flooded pit, an opening into the top of the well, or a crock well. Eliminate significant construction deficiencies before starting sampling.

Has the well been struck by lightning, a vehicle, lawnmower, etc.?

It is not unusual to have the casing or pitless adapter be damaged by this kind of occurrence, which may allow surface water contamination into the well. Many times, this damage may not be visible at the well head and may necessitate excavation around the casing.

What is the age, type, and depth of the well?

If the well is old, it is possible the casing has deteriorated to the extent that there is a hole in the casing. In some areas of the state there are bedrock aquifers that cannot supply safe water. Shallow wells with high bedrock conditions may be vulnerable to surface or near surface water intrusion, particularly if there is no grout. In some high bedrock areas of the state some wells may have less than 25 feet of casing.

Have any repairs or additions been made on the well or distribution system?

Repair work without the necessary follow-up disinfection is a common contributor to a coliform contamination problem.

Is there a treatment device?

The coliform problem could be the result of a contamination of the treatment device. Two treatment devices, which have been known to cause contamination problems, are water softeners and carbon filters. These should be isolated from the repeat sampling locations.

If possible, advise the owner / representative about how and where to collect the required repeat samples after the initial positive sample result. Following a positive sample, public water supply owners are required to collect four repeat samples. This is a good time to attempt to isolate the problem. A technical assist could help the sanitarian become familiar with the facility and at the same time, a sanitary survey could be done. A survey would spot cross connections and construction violations.

- The uninformed collector of samples frequently samples from inappropriate locations during repeat sampling. Examples of frequently used poor sampling locations include bathroom and utility sinks.
- The collection of four repeat samples presents a good opportunity to assess the distribution system and collect samples at proper locations. Planned sampling will help the sanitarian to determine if she / he is working with a well or a distribution problem.
- One of the samples shall be collected as close to the well as possible. This location is usually the raw water sampling tap near the pressure tank. Caution should be taken to properly disinfect sampling taps if they are not in a sanitary environment. Chemical versus heat disinfection is

recommended (e.g., completely immerse the sampling tap in a container of chlorinated water). The pump is to be running at the time of collection.

- One sample has to be collected from the same location as the original positive.
- Evaluate the fixture for leakage and sanitary conditions.
- If the system configuration is large enough, try to collect the remaining two samples in locations that will give an overall picture of the system. If possible, one sample would be collected upstream and the other downstream from the original positive sample result. If there is only one good sampling location, then collect two samples from the one sanitary sampling site.

The water supply system has been evaluated for construction deficiencies. Good sampling locations were selected. The sample results show there is a distribution system contamination problem; i.e., the raw water sample was good and distribution system samples were positive.

- In almost every circumstance the disinfection procedure for the distribution system is easiest through the well. Occasionally there are circumstances where it is not desirable to disinfect through the well. It is possible to pump chlorinated water (50 – 250 ppm) through only the distribution system. The chlorinated water should be mixed in a large enough tank to allow flushing and filling of all the lines.
- Simple chlorination can be used for treating a system with a contaminated distribution system. When using simple chlorination calculate the well casing volume and the amount of chlorine to obtain 200 ppm. Mix the chlorine in 5 gallons of water and pour the chlorine solution into the top of the well. The water is then pumped throughout the distribution system.
- Make sure the chlorinated water is placed in all portions of the distribution system. Open every tap and flush the water through the tap until the chlorinated water returns. Start the flushing process at the far end of the distribution system and work back towards the pressure tank. Flushing should be done on both the cold and hot water parts of the system. Bypass any water softeners and disinfect these separately. (One cup of bleach into the brine tank and then manually regenerate resin). Open all taps including raw water, outside hose bibs and remote or little used areas. Owners should be advised that chlorine is a strong oxidant and will remove mineral incrustations in the well and distribution system. They should remove, clean, and disinfect all aerators after flushing the system. Remove or bypass all treatment devices during flushing.

If sampling shows that there is coliform contamination in the well.

- The bulk displacement method is the preferred way of chlorination of the well. Determine the casing size and depth of well. Disinfect at 100 – 200 ppm chlorine concentration using 2 to 5 times the casing, and open borehole if a rock well, volume of water. When using this method of disinfection chlorinated water is pushed out into the aquifer. Example: a 5" well is 100' deep and has a static water level of 50'. Fifty gallons of water must be displaced (one gallon water per foot of casing). Therefore, 250 gallons of chlorinated water is needed to achieve five times the casing volume. It would take approximately one gallon of 5-1/4 % bleach to achieve the desired 200- ppm.
- Flush the chlorinated water into all parts of the system. The chlorinated water should remain in the piping, preferably overnight, for a minimum of ten hours. The chlorine residual should be checked from fixtures to confirm that there is a minimum chlorine concentration of 100 ppm.
- Flush the chlorine from the system. Forewarn the owner that extended pumping of the aquifer will be needed to flush all remnants of the chlorine out of the aquifer and system. Before collecting a water sample check for any chlorine residual using a Hach or swimming pool free chlorine test kit. Collect representative samples from the system after the water is clear of any chlorine residual. Separate sets of samples should be collected at least 24 hours apart.

The well that will not produce good sample results even after multiple bulk displacement procedures. The need for further investigation is necessary.

- Could the problem be an insect infestation, contaminated aquifer, short cased well, or a hole in the well casing? A more extensive investigation is needed. In some situations, it may be possible to ask EGLE to assist in the investigation with the downhole camera "if there is reasonable cause" to believe the problem could be casing damage. Examples of factors that could warrant the use of a downhole camera: corrosive soils / corrosive water area, well struck by lightning, or the well head was struck by a vehicle. At this point of the investigation things become more complicated and expensive. A drilling contractor will have to pull the pump, drop pipe, Lemco seals, or any other obstructions in the well. The bottom of

the well can be checked for contaminants and the inside of the casing scrubbed. Any debris can be removed from the bottom of the well by bailing with a cable tool rig or using air injection with a rotary rig.

- Sometimes it may be beneficial to collect a sample directly from the well. This must be done with the driller's assistance. The sample can be collected off the pitless discharge after the pitless is pulled. This sampling location will eliminate the service line as a possible source of contamination.
- Other possible sources of contamination can include buried pressure tanks (Whitewater buried tanks have been an offender), point-of-use treatment devices (e.g., activated carbon filters), leaky pitless adapters. Pressure tanks with ruptured bladders have also been known to cause problems.
- Dead end lines have occasionally been a real problem. You can do a good job of disinfecting the system and get good samples; however, the bacteria problem will recur due to the inability to get the chlorinated water into the contaminated dead end lines. Dead end lines should be eliminated when found to prevent recurring positive samples. One possible solution for distribution coliform contamination, especially applicable to large distribution systems, is the certification of a limited treatment operator and the installation of a chlorinator. Remember that the use of limited treatment still requires sampling of the raw water from the well. The raw water samples must consistently be free of coliform bacteria.

When a facility has a problem collecting two consecutive good samples from a new well.

- Before sampling a newly constructed well explain to the water supply owner the occasional difficulty in obtaining the initial coliform "not detected" samples from a new well. This prepares the owner in the eventuality of difficulties. Explain that positive coliform sample results are indicator organisms, we do not know if there is disease causing organisms present and several disinfection procedures are sometimes needed to properly disinfect the well. Discuss the disinfection and sampling procedures with the water well contractor.
- Work with the driller so he understands why and where samples must be collected. The collector should take one of the required samples at the raw water-sampling tap. This is the point where the well drilling contractor's work is completed. The driller will then understand when you collect additional samples from the distribution system.
- We recommend the driller chlorinate using the bulk displacement method with liquid chlorine. Common household bleach (sodium hypochlorite) is a good disinfectant and will flush from the system. If the solid form of chlorine is used (calcium hypochlorite) the driller should use the granular form not the tablets which are very slow to dissolve and may stay in the system for weeks or even months.
- The driller is responsible for the new well to produce coliform free potable water (Rule 161 (2) of Part 127). When coliform free samples cannot consistently be collected even after repeated bulk displacement attempts the driller will need to take more aggressive action. This will usually require the pulling of the pump and drop line. The contractor may then need to evaluate the need to do additional development of the formation. Experience has shown that the combination of thorough development, extensive pumping to waste and prompt and thorough disinfection of the well is the best way to obtain satisfactory sample results. This will help eliminate any contaminants that may have been introduced during the drilling process. If the contractor discontinues their efforts to eliminate the contamination problem, the well is considered abandoned. The well would then be plugged and the owner would contract for a new well.

Investigating E.coli MCL

Well address	Date of investigation

WELL

Well record	
Casing diameter	
Casing material	
Age	
Rock or drift	
Grouted	
Abandoned well(s)	
Construction deficiencies	
Well cap/conduit	
Injury to wellhead	

GEOLOGY

Depth to aquifer	
Confining layer	
Casing length	
Length of screen	
Length of open borehole	

PUMP

Submersible	
Jet	
Turbine	
Hand pump	
Drop pipe length	

DISTRIBUTION SYSTEM

Treatment	
Softener disinfected separately	
Sample tap	

Investigating E.coli MCL

Service line material	
Pressure tank	
Dead end lines	
Inline filters	
Recent work on plumbing	

INVESTIGATION

Downhole camera		Date
Pump pulled		Date
Magnet (measured casing)		Date
Bail/Air pumped well		Date
Check grout		Date

SAMPLE RESULTS

Historical/past MCLs	
Samples collected by	

Raw water sample (pump running)

Date	Result
Date	Result
Date	Result

Wellhead sample

Date	Result
Date	Result

Other sample results

Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location

Investigating E.coli MCL

Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location
Date	Result	Location

DISINFECTION PROCEDURES

Date	Type
Date	Type
Date	Type

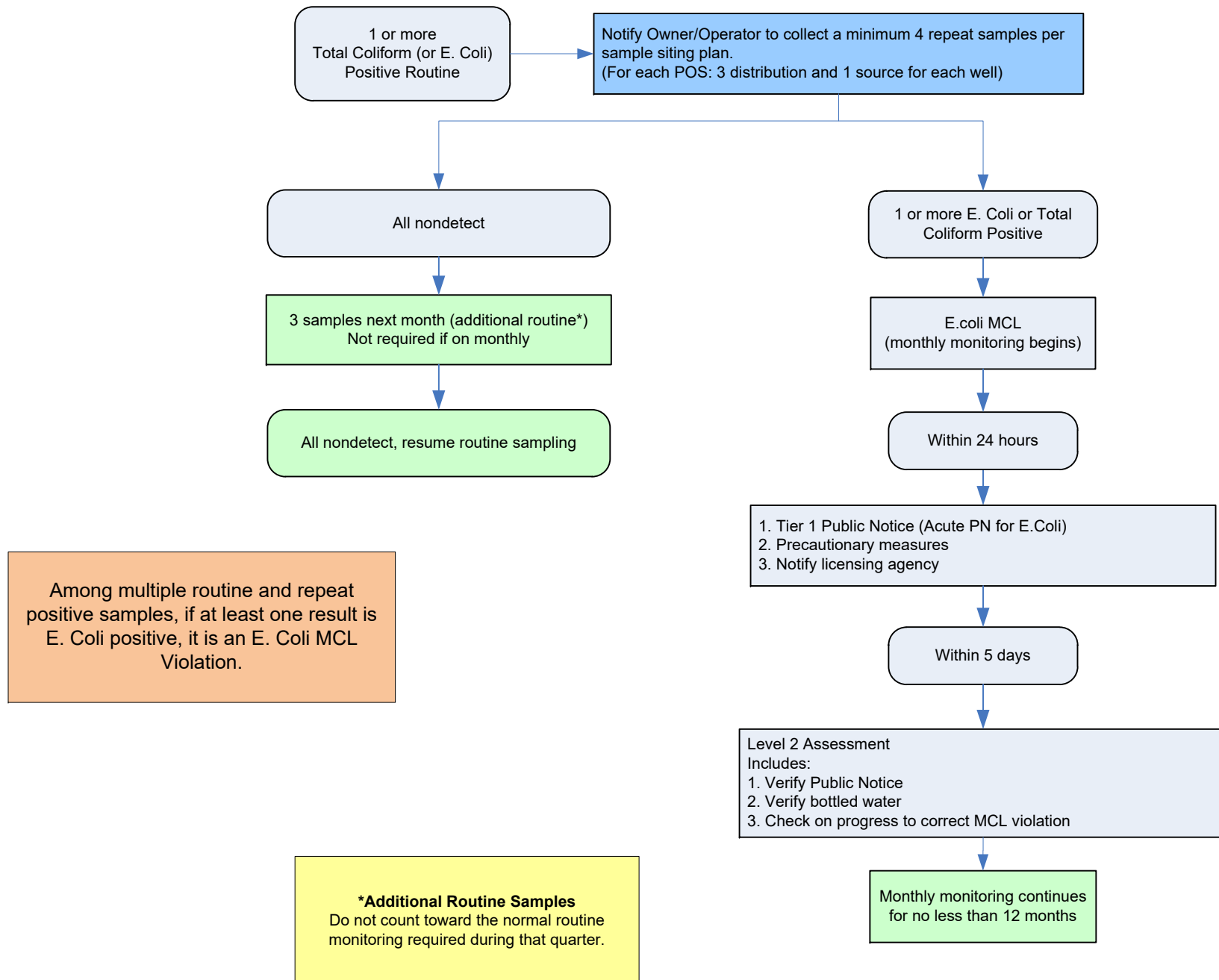
Simple disinfection	
Sodium or Calcium Hypochlorite	
Bulk displacement	
Tremie pipe used	
Mineral buildup on casing	
Casing swabbed	
Chlorine concentration (PPM)	
Contact time (hours)	
Re-circulation	
pH adjustment	
Re-developed	
Acid used (type)	

Investigating E.coli MCL

CONCLUSIONS/COMMENTS

Revised Total Coliform Rule

Response Flowchart for E. Coli Positive



Procedures for E. Coli Sample Follow-up at Noncommunity Water Supplies

Nothing in this document should be construed as transferring responsibility from the supplier of water to the DEQ, local health department, or other authorized agency.

Routine E. coli Positive Sample

An E. coli positive result from an active NCWS requires the owner to collect repeat samples within 24 hours of notification (R32510707 (1)). The following are minimum actions to be taken by LHDs upon notification of the positive E. coli result.

Within 24 hours or the end of the next business day of notification, the LHD must:

- 1) Review the bacteriologic sample history of supply and sanitary survey information to assess the systems potential for contamination and ability to consistently produce coliform free water.
- 2) Contact the owner/operator to discuss possible causes, recent system changes, well damage, observable water quality changes such as taste, color, odor, etc.
- 3) Reiterate the requirement for the owner/operator to collect 4 repeat samples (according to the sample siting plan) within 24 hours of being notified of the positive result and review sampling location and protocol.

It is recommended that the LHD conduct a site visit to evaluate the water systems potential for contamination. The implementation of precautionary measures may be necessary following initial contact and/or investigation.

E. Coli Maximum Contaminant Level Violation (MCL)

An acute coliform MCL violation occurs when there is more than one positive routine or repeat samples and at least one of the results is positive for E. coli. The SDWA, R325.10707 describes general requirements for owners when a violation of the MCL occurs. The following are minimum requirements:

- 1) Public notice –The owner is required to post notice with required language where water is consumed. Parents/guardians to be notified if consumers are children. List restrictions on use of water as appropriate. Copy of signed notice is to be sent to LHD for verification. If there is licensing agency responsible for overseeing the facility, they need to be notified.
- 2) Precautionary measures – An approved alternate source of water (typically bottled water) must be provided by the supplier for potable use as indicated in the public notice. The local health department has discretion to determine the appropriate means to prevent exposure to E. coli contaminated water based on the type of facility and populations served. Additional measures may be necessary including providing alternate means of hand washing, suspension of food preparation, etc. If the agency determines the continued operation would put public health at risk, closure can be ordered.
- 3) Investigation/corrective action – As a result of the E. coli MCL violation, a Level 2 Assessment (LV2) is required to be conducted and completed by the LHD within 5 days. The purpose of the LV2 is to identify sanitary defects, establish corrective actions, and propose a timetable for any corrective actions. The LHD must also verify the public notice and precautionary measures are in place.
- 4) Monitoring – As the result of triggering the LV2, the monitoring frequency for the facility is increased to monthly sampling. A reduction in monitoring will be determined by the LHD after 12 months of compliance.

Potential Imminent Health Hazard

The LHD may take more immediate or stringent action to protect public health based upon information or observation of conditions of an imminent health hazard. This could mean immediate precautionary measures (bottled water & public notice), or in severe cases requesting closure. In most cases, voluntary compliance with precautionary measures can be obtained, however, Section 15, 325.1015 of the Act provides authority to take such action where an MCL has not been established if it is believed an imminent health hazard exists. Supervisory approval should be obtained prior to initiating such action.

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: E Coli Positive Water Sample Result at Supply Name
Water Supply Serial Number (WSSN)

Dear _____ :

A water sample was collected from your noncommunity water supply on date. The sample tested positive for E. coli bacteria. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, you must collect repeat samples within 24 hours of notification of unsatisfactory sample results.

Repeat samples must be collected at locations designated on your sample siting plan, including:

- one from the same tap as the initial positive
- two from designated sampling locations in the distribution system
- one from the raw water sample tap for each well that was running at the time of the routine sample

If you have not re-sampled as described above, do so immediately. If needed, please contact this office to review sample collection techniques and locations. Until non detect samples are obtained, precautionary measures, such as providing bottled water, should be taken.

Failure to collect your repeat samples or follow up in a timely manner will result in issuance of an E. coli maximum contaminant level (MCL) violation and will result in increased monitoring.

To ensure water results are linked to this supply, check that your laboratory forms are fully complete, including: collection date, time, sample location ID, and WSSN. All coliform bacteria samples must be tested by the laboratory within 30 hours of collection.

If you have any questions, please contact me at _____ .

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Maximum Contaminant Level (MCL) Violation at Supply Name
Water Supply Serial Number (WSSN)

Dear _____ :

Water samples from the above listed well were collected on date and were positive for E. coli or total coliform bacteria.

A second set of samples was collected on date and at least one of these samples was positive for E. coli or total coliform. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, this constitutes an E. coli maximum contaminant level (MCL) violation. Therefore you must now do the following:

- Provide an alternate approved source of water available to the public for consumption. For continued business operation, you must use an approved source (such as bottled water) for all drinking water purposes, including making coffee and dishwashing.
- Have the well and water supply system chlorinated by a Michigan Registered Water Well Contractor.
 - o We recommend the displacement method for chlorinating the well (200 ppm concentration) with at least five (5) times the casing volume pumped into the well. It is important that the water not be used during this process.
 - o The following day, chlorine is flushed from the system.
 - o Samples for total coliform shall be collected 24 hours apart after flushing the system.
- Following verification that no chlorine residual is present, resample the well. Submit a copy of all sample results to this office.
- Public notice is required to be posted while the well is out of service. Please sign and fax the enclosed public notice as soon as possible and return to this office at fax or email.
- The water system may not be put back into service until approval from LHD has been issued.

A Level 2 Assessment (LV2) is required to be conducted and completed by the LHD. The purpose of the LV2 is to identify sanitary defects, establish corrective actions, and propose a timetable for any corrective actions.

As the result of the LV2, the monitoring frequency for System Name will be increased to monthly sampling starting Month, Year . A reduction in monitoring will be determined by LHD after 12 months of compliance.

I will contact you to schedule the LV2. If you have any questions, please contact me at _____ .

Total Coliform Sampling Postponement Waiver Form

Issued under authority of the Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq., and its Administrative Rules (Act 399).

Supply Name:	
WSSN:	
Bacteriological Sampling Frequency:	Number of Routine Samples Required:
Level 1 Assessment Trigger Date:	Level 1 Assessment reviewed Date:

This postponement waiver is solely for noncommunity systems utilizing groundwater; serving 1,000 people a day or fewer; and on quarterly or annual routine bacteria monitoring.

Requirement for collecting three routine coliform samples for the month of **month following routine positive** is postponed in accordance with R325.10704d(10), based on a site investigation and subsequent findings.

Date of site visit: **Must be within 30 days of trigger**

Check specific cause of repeat total coliform positive sample: (If no cause was found, a postponement waiver should not be considered.)

- ☐ System conducted construction and/or repairs followed by inadequate disinfection
- ☐ Sanitary deficiency in well, pumping equipment, distribution system (dead end lines in basement)
- ☐ Other: Describe:

Check applicable action taken to correct cause identified above:

- ☐ Corrected sanitary deficiency in well or pumping equipment. Date: **Date**
- ☐ Corrected sanitary deficiency in distribution system. Date: **Date**
- ☐ Disinfected well/distribution system according to procedure. Date: **Date**
- ☐ Additional monitoring will be required: Describe:
- ☐ Other: Describe:

Three additional routine samples shall be collected during the month of **month** to satisfy Rule 704d(10). These samples must come from different drinking water sites if collected on the same date. If fewer sites are available, the additional routine samples shall be collected at regular time intervals throughout the month.

Additional comments and chronology of events

Attach any correspondence sent to the system.

Waiver postponement recommended by: **LHD Staff** Date: **Date**

A previous waiver postponement has been issued to this system: ☐ Yes ☐ No

Date of previous waiver postponement: **Date**

No system should receive more than two postponement waivers in a rolling 12-month period.

Supervisor Signature: _____ Date: _____



SEASONAL SUPPLY DETERMINATION CHART FOR NONCOMMUNITY PUBLIC WATER SUPPLIES (NCWS)

Description	Examples	Category	Revised Total Coliform Rule (RTCR) Requirements		Other Possible Requirements			Comments
		Seasonal or Year-round	Certified Start-Up	Monthly Baseline Monitoring (Groundwater Serves ≤1000) ¹	Distribution Flushing	Distribution Chlorination ²	Two Special-Purpose Samples Non-detect for Total Coliform	
<i>Facility Stays Open:</i> Only a few people are served in slow season. Entire distribution system remains pressurized.	Park; Tourist Attraction	Year-round	No	No	No	No	No	
<i>Facility Stays Open:</i> Has one well, where a portion of the distribution system shuts down while a portion continues to serve the public (including employees).	Campground; Golf Course	Year-round	No	No	Yes	Yes	Yes ²	Sample siting plan and start-up procedure customized to conditions and configuration.
<i>Facility Stays Open:</i> Has two or more wells under one Water Supply Serial Number or Public Water System I.D. number, where at least one well shuts down and at least one well continues to serve the public.	Park Visitor Center/Office Well plus Campsite Well	Year-round	No	No	Yes	Yes	Yes ²	Sample siting plan and start-up procedure customized to conditions and configuration.
<i>Facility Closes:</i> System is fully or partially shut down (part of system may be in use by owner's family).	Campground; Migrant Labor Camp	Seasonal	Yes	Yes	Yes	Yes	Yes ²	
<i>Facility Closes:</i> Entire distribution system remains pressurized.	Ice Cream Shop Attached to Single-Family House	Seasonal	Yes	Yes	No	No	Yes ³	RTCR allows exemption from certified start-up and monthly baseline monitoring, see <i>Rule 325.10704d(9)(c) of Act 399</i> . Flushing and two (2) pre-opening non-detects recommended.
<i>Facility Stays Open:</i> Hand pump intact and accessible.	State Forest Campground	Year-round	No	No	No	No	No	
<i>Facility Closes:</i> Hand pump intact but inaccessible or is determined to be so remote that off-season use is extremely rare.	Park with Gated Entrance	Seasonal	Yes	Yes	No	No	Yes ³	If remoteness precludes collecting samples throughout the year, the system is seasonal.
<i>Facility Closes:</i> Hand pump disabled.	Roadside Park	Seasonal	Yes	Yes	No	No	Yes ³	
<i>Facility Closes:</i> Served by community water supply (CWS) system.	Campground	N/A						Facility served by a CWS not a seasonal system under RTCR.

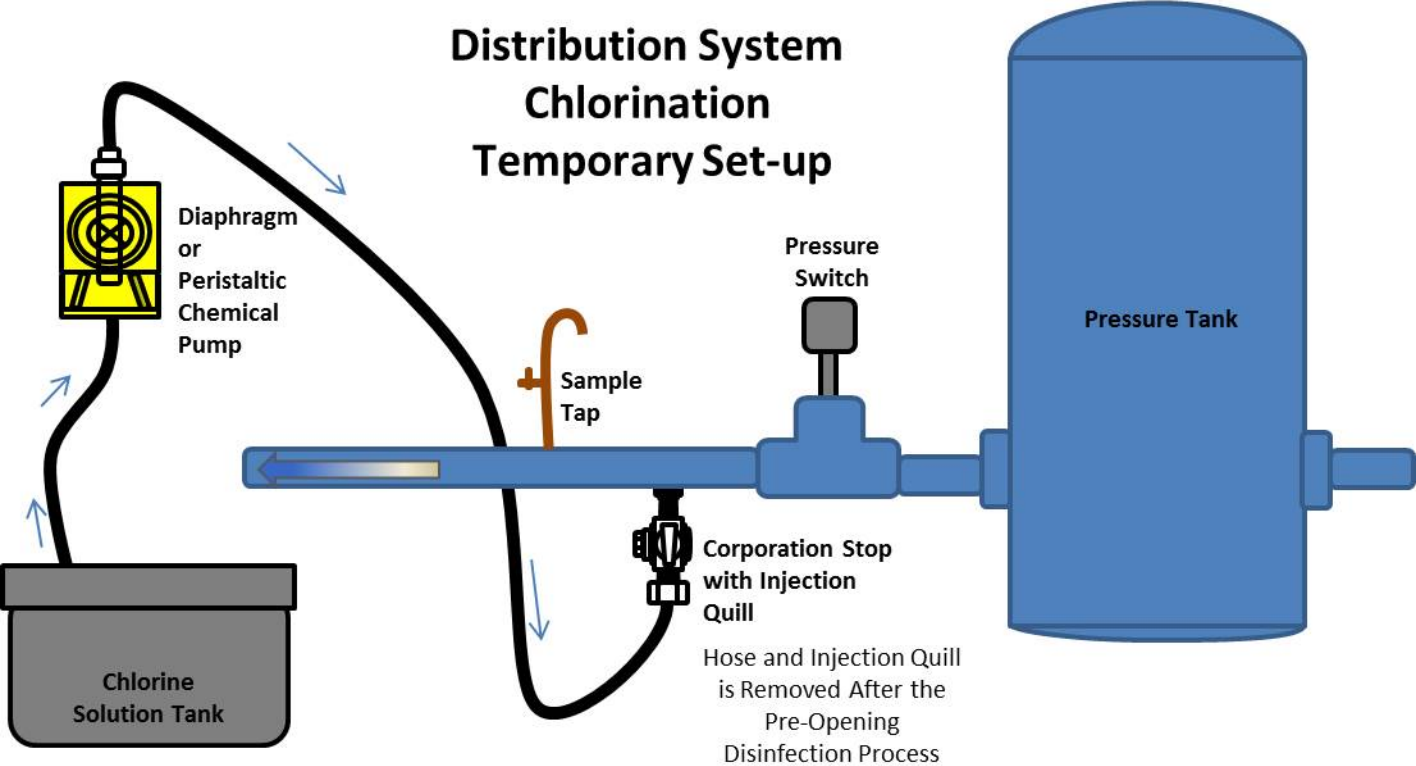
¹ Always monthly when >1,000 people served per day.

² Where all or part of a distribution system is not in year-round service, chlorination and two (2) non-detect pre-opening (special purpose) samples are required before water is served to the public. *Rule 325.11110(4) of the Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq., and its Administrative Rules (Act 399).*

³ As part of standard state-approved start-up procedures.

For additional information on Seasonal Supplies and the RTCR, visit the EGLE NCWS webpage at the following link: Michigan.gov/EGLENoncommunityWaterSupply and click on "Revised Total Coliform Rule" or the EGLE Policy and Procedure ODWMA-399-013 Classification of Public Water Supplies can be found on the [EGLE Policy Website](https://Michigan.gov/EGLEPolicyWebsite).

Distribution System Chlorination Temporary Set-up



	DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION ENVIRONMENTAL HEALTH SECTION POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: May 1, 2017 Revised Date: Reformatted Date:	Subject: Approved Methods to Winterize Distribution Piping Program Name: Public Drinking Water Supplies Number: DWMAD-399-030 Page: 1 of 55		Category: ☐ Internal/Administrative ☒ External/Non-Interpretive ☐ External/Interpretive Type: ☐ Policy ☐ Procedure ☒ Policy and Procedure

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of or procedures and practices available to the public; and does not have the force and effect of law. DEQ staff shall follow the directions contained in this document.

ISSUE:

Noncommunity water supplies (NCWS) that close for the winter without heat must protect their distribution system pipes from freezing. Most often, the pipes are winterized by draining and then blowing out the pipes with pressurized air. In some cases, this method cannot easily or inexpensively be done because of the way the system is constructed. In addition, some community water supplies (CWS) shut down a portion of their distribution system or have customers who close for the winter and are unable to drain their pipes.

As of the date of this policy, there is no antifreeze available that is certified as meeting the NSF/ANSI Standard 60: Drinking Water Treatment Chemicals. The Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), requires that all chemicals used in drinking water treatment meet NSF/ANSI Standard 60. This policy/procedure allows for the use of a pharmaceutical or food-grade propylene glycol antifreeze as an alternative to dewatering, when it is technically and economically necessary.

NOTE: Ethylene glycol antifreeze must never be used in drinking water distribution systems. Ethylene glycol antifreeze is the type used in automobile radiators. It is a poison and can be extremely hazardous if consumed by humans or animals.

AUTHORITY:

The Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and its Administrative Rules.

DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION
POLICY AND PROCEDURE

Number: DWMAD-399-030

Subject: Approved Methods to Winterize Distribution Piping

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DEFINITIONS:

Community Water Supply (CWS): means a public water supply that provides year-round service to not fewer than 15 living units or which regularly provides year-round service to not fewer than 25 residents.

Generally Recognized as Safe (GRAS): is an United States Food and Drug Administration designation that a chemical or substance added to food is considered safe by experts, and so is exempt from the usual Federal Food, Drug, and Cosmetic Act food additive tolerance requirements.

Noncommunity Water Supply (NCWS): means a public water supply that is not a community supply, but that has not less than 15 service connections or that serves not fewer than 25 individuals on an average daily basis for not less than 60 days per year.

Public Water Supply (PWS): means a waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water, and does not include either of the following:

- I. A waterworks system that supplies water to only one living unit.
- II. A waterworks system that consists only of customer site piping.

POLICY:

The following, in ascending order of preference, are the methods that shall be used by a PWS to winterize distribution, customer site, or other piping connected to the PWS, including the requirements that must be met if the PWS or its customer uses a pharmaceutical or food-grade propylene glycol antifreeze:

1. The preferred method to winterize drinking water distribution piping is dewatering and blowout of the pipes from the source to the faucets, hose bibs or other outlets using pressurized air. Because dewatering is the preference, proposed seasonal systems shall be designed to be effectively dewatered by draining and using pressurized air.
2. If dewatering cannot be feasibly or effectively done, and as long as there is no antifreeze available that is certified as meeting the NSF/ANSI Standard 60, approval can be sought from the Drinking Water and Municipal Assistance Division (DWMAD) or local health department (LHD) to use antifreeze made from propylene glycol, with dipotassium phosphate added to inhibit bacterial growth. The following information shall be provided to the DWMAD or LHD for review:

DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION
POLICY AND PROCEDURE

Number: DWMAD-399-030

Subject: Approved Methods to Winterize Distribution Piping

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- a. Proof that the propylene glycol antifreeze is of pharmaceutical or food-grade quality, and the product contains no harmful or toxic substances. This proof can be obtained from the manufacturer's product information and the material safety data sheet (MSDS). Any antifreeze that is GRAS would meet this criterion.

If only a portion of the distribution system piping will be winterized using pharmaceutical or food-grade propylene glycol, and other sections of the distribution system will remain open and serve drinking water to the public, then backflow from the winterized portion to the portion in service is prohibited. Backflow shall be prevented by a physical separation of the piping or by use of appropriate cross-connection control assemblies in compliance with Act 399 requirements at all areas where the pipes connect. In instances where the piping system is supplied by a CWS, the water supplier must inspect the connection each year the winterization procedure is completed.

- b. Distribution piping that is winterized must undergo a start-up procedure prior to serving water to the public. A flushing and disinfection process must be a part of the start-up procedure. All NCWS owners or operators must certify that the start-up procedure was followed. The certification shall be documented on the Michigan Department of Environmental Quality, Start-Up Certification For Seasonal Noncommunity Public Water Supply form, and sent to the LHD prior to serving water to the public. This form is available on the DEQ's Noncommunity Web page at: www.michigan.gov/deqnoncommunitywatersupply. CWSs are responsible for following this start-up procedure for distribution piping they winterize, and for ensuring their customers follow proper procedures when restoring service so they do not cause microbial contamination that may have entered the dewatered piping from spreading into other areas of the distribution system.

NOTE: If antifreeze is used, then the solution must be disposed of properly when purged from the system. Discharges of antifreeze to the ground or surface waters are prohibited by law.

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PROCEDURES:

Step	Who	Does What
1.	PWS owner or operator	Requests approval from the LHD or DWMAD district office to use propylene glycol antifreeze to protect distribution piping from freezing. Provides information on the specific product to be used, and product information or an MSDS indicating the antifreeze is of pharmaceutical or food-grade quality.
2.	LHD/ DWMAD	Reviews product information and, if acceptable, approves the use of the antifreeze. Copies of the product literature and/or MSDS shall be kept with the PWS file.
3.	LHD/ DWMAD	Confirms that the appropriate cross-connection devices are installed, maintained, and certified, as required by Act 399. Documents the information in the PWS file.
4.	PWS owner or operator	When opening for the season or restoring service to the winterized portion, the PWS performs a start-up procedure on the distribution piping that includes a disinfection process. For an NCWS, completes the Start-Up Certification For Seasonal Noncommunity Public Water Supply form and sends it to the LHD prior to serving water to the public.
5.	LHD	Records the receipt of the certification form.
6.	PWS owner or operator	If a new antifreeze brand is to be used, seeks approval for its use from the LHD or DWMAD district office. If antifreeze will no longer be used to winterize the piping, provides notification of the change to the LHD or DWMAD district office.

DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION
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APPENDICES:

Start-Up Certification For Seasonal Noncommunity Public Water Supply form

DIVISION DIRECTOR APPROVAL:

Bryce Feighner, P.E., Director
Drinking Water and Municipal Assistance Division

ENVIRONMENT DEPUTY DIRECTOR APPROVAL:

Amy Epkey, Deputy Director



START-UP CERTIFICATION FOR SEASONAL NONCOMMUNITY PUBLIC WATER SUPPLY

Issued under authority of the Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq., and its Administrative Rules (Act 399).
Failure to submit certification is a violation of Act 399 and may subject the water supply to enforcement actions.

This completed form must be submitted to the local health department (LHD) **PRIOR TO PROVIDING WATER FOR PUBLIC USE**. All of the steps **must** be completed and deficiencies corrected prior to opening (keep a copy of the completed form for your records).

Supply Name:		
Water Supply Serial Number (WSSN):		
Anticipated Opening Date to the Public:		Anticipated Closing Date:
<i>Details of the approved pre-opening start-up procedures can be found in the DEQ SEASONAL PUBLIC GROUNDWATER SUPPLY HANDBOOK.</i>		
Pre-Opening Tasks Completed	Yes	Comments/Findings (☐ Check the box if you provided additional comments on a separate sheet of paper)
1. Evaluated the Wellhead and Surroundings	☐	
2. Evaluated the Water System	☐	
3. Evaluated the System for Cross Connections	☐	
4. Looked at All Air Gaps and Backflow (BF) Preventers and Replaced if Necessary	☐	
5. Testable BF Preventer Assemblies Tested by Certified Tester	☐	☐ N/A
6. Flushed the Supply	☐	
7. Disinfected the Depressurized Portion of the System	☐	
If disinfected at the wellhead, provide Michigan registered well drilling contractor name:		
8. Collected Two (2) Pre-Opening Bacteriological Samples 24 Hours Apart According to Sample Siting Plan	☐	
Dates Bacteriological Sampling Completed: (If using a private laboratory, it is your responsibility to submit the sample results to your LHD.)		
9. I certify that I have completed the above-listed tasks in accordance with the <i>START-UP PROCEDURES FOR SEASONAL NONCOMMUNITY PUBLIC WATER SUPPLIES</i> for system-specific LHD-approved procedure(s). The information on this certification is complete, accurate, and true to the best of my knowledge. Any deficiencies observed were corrected and details have been provided above. <i>Submission of this certification each year to the LHD before opening to the public is required under Act 399, referenced above.</i>		
Name/Title (Please Print):		
Signature:		Date:
Telephone:	Fax:	E-mail:
Local Health Department Use Only		
Certification Reviewed By: _____		Date Reviewed: _____
Comments: _____		Approved: Yes ☐ No ☐

Submit to LHD:

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.



START-UP PROCEDURES FOR SEASONAL NONCOMMUNITY PUBLIC WATER SUPPLIES

Issued under authority of the Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et seq., and its Administrative Rules (Act 399). Failure to follow start-up procedures is a violation of Act 399 and may subject the water supply to enforcement actions.

*These procedures must be completed **PRIOR TO PROVIDING WATER FOR PUBLIC USE.***

Seasonally-operated noncommunity public water supplies must ensure the water is safe to drink before opening for the season. Follow the steps in the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Start-Up Procedures before serving water to the public. The local health department (LHD) may require additional steps specific to a water supply system. Start-up procedures may be completed by the water supply owner or someone qualified to work on water supply systems, such as a Michigan registered water well contractor, licensed plumber, or a water supply certified operator. Detailed information on each step is provided in the [DEQ Seasonal Public Groundwater Supply Handbook](https://www.michigan.gov/Documents/DEQ/Seasonal_Public_GW_Supply_Handbook_488526_7.pdf) (Michigan.gov/Documents/DEQ/Seasonal_Public_GW_Supply_Handbook_488526_7.pdf).

1. Evaluate the Wellhead and Surroundings

Inspect the well for signs of damage – exposed wire, broken/loose cap, missing vent screen, or damage to the casing. Clear overgrown vegetation from around the well casing. Remove chemicals, fuel, or other potential sources of contamination from the well area.

2. Evaluate the Water System

Check the pressure tank and supply lines for leaks/damage. Check electrical lines for damage. Clear the area around the raw water sample tap. Remove unnecessary items from well house/well equipment room. Drain stagnant water from the pressure tank. Verify that filters and treatment devices are clean and operating properly. Eliminate dead-end piping.

3. Evaluate the System for Cross Connections

Verify that backflow preventers are on hose bibs, dump station towers, mop sinks, toilets, and ice machines.

4. Visually Inspect All Air Gaps and Backflow Preventers

Make sure air gaps are appropriate. Look for leaks at backflow preventer devices and assemblies; replace if necessary.

5. Test Backflow Preventer Assemblies

Assemblies must be tested at the appropriate frequency or no less than once every three (3) years by a certified tester.

6. Flush the Supply

Flush the well and distribution system until the water runs clear. The longer the flushing time, the better. Avoid the septic system area.

7. Disinfect the Depressurized Portion of the System

Disinfect the portion of the distribution system that was depressurized. A water supply owner may disinfect the distribution system using an approved positive displacement chlorinator or by pouring chlorine into a plumbing port in the well house or room. Only a Michigan registered well contractor can disinfect the well. Flush the system following disinfection until free of chlorine.

8. Collect Two (2) Pre-Opening Bacteriological Samples 24 Hours Apart

Collect pre-opening sample from the distribution system, as identified in the sample siting plan, and collect another sample at least 24 hours later. These samples do not count toward routine monitoring requirements. If both sample results are non-detect for total coliform, continue to the next step. **If a sample is positive for coliform or *E. coli* bacteria, contact your LHD for further instructions. Do not open your water system to the public.**

9. Certify and Submit Start-Up Certification Form to LHD

Complete and sign the *Start-Up Certification for Seasonal Noncommunity Public Water Supply* form and submit it to the LHD with the two (2) consecutive non-detect bacteriological sample results before opening to the public.

Additional Information

The *Start-Up Certification for Seasonal Noncommunity Public Water Supply* form is available from the LHD and electronically from the [EGLE's Noncommunity Water Supply web page](http://Michigan.gov/EGLE/0,9429,7-135-3313_3675_3692---,00.html) (Michigan.gov/EGLE/0,9429,7-135-3313_3675_3692---,00.html).

The [DEQ Seasonal Public Groundwater Supply Handbook](http://Michigan.gov/Documents/DEQ/Seasonal_Public_GW_Supply_Handbook_488526_7.pdf) (Michigan.gov/Documents/DEQ/Seasonal_Public_GW_Supply_Handbook_488526_7.pdf) is also available electronically on the EGLE website.

Hand Pump Wells

Hand pumps are not pressurized and are typically available for use year-round. If the hand pump is used seasonally, complete the start-up procedures and submit the start-up certification form to the LHD. Disinfection of seasonal hand pump wells is not required as part of a start-up procedure unless work was performed on the well.

Repairs/Service Work

Only a registered water well drilling contractor may chemically treat public water wells. Registered or licensed individuals may be required by law to perform work on the distribution system. Be sure to forward the details of specific work completed on the well or system to the LHD.

Pre-Opening (Special Purpose) Samples

Obtain non-detect results from two (2) consecutive pre-opening special purpose bacteriological samples according to the sample siting plan. This ensures the start-up procedures have eliminated potential contamination before serving water to the public. If coliform is detected, the water supply can correct the problem before opening and avoid triggering increased monitoring.

Sample Bottles, Forms, and Reporting

Water supplies that use EGLE's Drinking Water Laboratory (Lab) may call 517-335-8184 to order bottles. The Lab automatically notifies the LHD with the results if the laboratory water analysis form is completed accurately. Circle "9-Other" for "Sampling Purpose" on the laboratory water analysis form for the two (2), 24-hour-apart pre-opening samples.

Write the Water Supply Serial Number(s) on each water sample form. Deliver/send the bottle(s) to the Lab to ensure the sample(s) can be processed within 30 hours of collection; otherwise, the result will be invalidated and the sample(s) must be recollected and analyzed.

Private laboratories may be used, provided they are certified by EGLE for drinking water analysis. Laboratory certification lists for total coliform, inorganic and organic contaminants, and lead/copper are available from the [EGLE's Laboratory Services Website](http://Michigan.gov/EGLE/0,1607,7-135-3307_4131---,00.html) (Michigan.gov/EGLE/0,1607,7-135-3307_4131---,00.html). Be aware that most private laboratories do not report the results electronically to EGLE; therefore, it is the owner's responsibility to submit all analytical results to the LHD.

Questions regarding Seasonal Start-Up Procedures should be directed to your LHD. To locate your Local Health Department please visit the following link: Michigan.gov/MDHHS/Local Health Departments (Michigan.gov/MDHHS/0,5885,7-339-73970_5461_74040---,00.html).

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Treatment Technique Violation at System Name
WSSN

Dear _____ :

Enclosed find the treatment technique violation public notice that is being issued to System Name. The reason(s) for the violation is in the notice.

System Name shall post the public notice as soon as practical, but no later than 30 days after the supply learns of the violation. The notice shall be posted and remain in place for as long as the violation exists, but not for less than 7 days.

As the result of the treatment technique violation, the monitoring frequency for this facility will be increased to monthly sampling starting month.

Sign and return a copy of the notice to LHD, by no later than date.

If you have any questions, please contact me at _____ .

EXAMPLE LETTER

LHD: Remove or add information as needed.

VIOLATION NOTICE

Certified Mail Receipt Number: _____

RE: Violation Notice – Treatment Technique for Failure to Provide Public Education of Lead

Dear _____ :

Our records show that water supply is in violation of the Safe Drinking Water Act 1976 PA 399, as amended (Act 399); R325.10410 *Public education regarding lead* and R 325.10710d *Reporting requirements for lead, copper, and corrosion control, Required reporting to the department* of the 1979 Administrative Code.

In accordance with R 325.1041 *Public education regarding lead* and R 325.10710d *Reporting requirements for lead, copper, and corrosion control*, of the 1979 Administrative Code, a water supply that exceeds the lead action level in more than 10% of distribution system taps shall deliver the public education materials within 60 days of the end of the monitoring period and send this office a copy of the PE materials and delivery documentation within 10 days after delivery. These requirements were outlined in the letter dated date. Our records show that you did not distribute the public education materials by the due date of 60 days after the end of the monitoring period. If you delivered the PE materials to your customers by the due date, please send us the PE materials and delivery documentation immediately.

LHD: reference other communications LHD made to investigate the violation, such as phone calls, office hearing, letters, etc. asking for missing PE materials.

Our investigation is considered complete. This violation began on date (this is probably 60+10=70 days after the end of the monitoring period) and will continue until you return to compliance. To return to compliance, you must post information on lead hazards in a public place or common area in each of the buildings served by the water supply and distribute PE materials to each person served by the water supply. You may use electronic transmission to meet this requirement. You must also submit to this office by date, a copy of the PE materials and documentation showing that you posted or delivered the materials as required above. For your convenience, attached is new copy of the provided PE materials.

If you have any information you would like us to consider regarding the violation(s) identified in this notice, please provide it in a written response by Date.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this Violation Notice, please contact me at email; or phone.

EXAMPLE LETTER

LHD: Remove or add information as needed.

SUBJECT: Per- and Polyfluoroalkyl Substances (PFAS) Monitoring Schedule at System Name
WSSN WSSN

Dear _____ :

Water samples taken from System Name on date detected one or more PFAS at a concentration which exceeds 50% of the drinking water standard or maximum contaminant level (MCL) set forth by the State of Michigan. The results are included in the table below.

Contaminant	MCL (ng/L)	Result
Perfluorononanoic acid (PFNA)	6	
Perfluorooctanoic Acid (PFOA)	8	
Perfluorooctane Sulfonic Acid (PFOS)	16	
Perfluorohexane Sulfonic Acid (PFHxS)	51	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	370	
Perfluorobutane Sulfonic Acid (PFBS)	420	
Perfluorohexanoic Acid (PFHxA)	400,000	

Due to the above result, monitoring frequency for PFAS has been set to quarterly.

Calculation of the PFAS running annual average is completed utilizing results over four consecutive quarters. LHD will calculate the running annual average as the quarterly sample results are submitted. If System Name has a calculated running annual average above an MCL for any of the seven (7) PFAS compounds, System Name will receive a violation notice from this office and will be required to take corrective actions.

Ensure samples are collected at the sample site location.

If you have any questions regarding these changes, please contact me at phone or email.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Reduction in Per- and Polyfluoroalkyl Substances (PFAS) Sampling at System Name WSSN WSSN

Dear _____ :

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and rules as amended, the water sampling requirements for PFAS at System Name have been reduced.

Routine quarterly sampling of this water supply found the presence of PFAS at a level greater than 50% of the maximum contaminant level (MCL) for one or more PFAS compounds. This exceedance required System Name to collect quarterly samples for PFAS. Subsequent sampling found the following concentrations:

LHD use this area to type the dates and results of the last four quarters

The running annual average (RAA) concentration for PFAS over these four quarters was RAA ng/l.

System Name has shown the water system can consistently and reliably provide drinking water below the MCL for PFAS and is now reduced to annual monitoring for PFAS. Please continue to collect the samples from designated sample tap.

If you have any questions regarding these changes, please contact me at phone or email.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Maximum Contamination Level Violation for Per- and Polyfluoroalkyl Substances (PFAS) at System Name WSSN

Dear _____ :

Water samples taken from the above facility's water system detected PFAS at a concentration that exceeds the drinking water standard or maximum contaminant level (MCL) set forth by the Michigan Safe Drinking Water Act (SDWA), 1976 PA 399, and rules as amended. The MCL for PFAS is calculated using a running annual average (RAA) over four quarters for each of seven (7) different compounds. The RAA at System Name for one or more of these compounds is above the MCL. The resulting RAA is shown in the table below.

Contaminant	MCL (ng/L)	RAA
Perfluorononanoic acid (PFNA)	6	
Perfluorooctanoic Acid (PFOA)	8	
Perfluorooctane Sulfonic Acid (PFOS)	16	
Perfluorohexane Sulfonic Acid (PFHxS)	51	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	370	
Perfluorobutane Sulfonic Acid (PFBS)	420	
Perfluorohexanoic Acid (PFHxA)	400,000	

Therefore, System Name is in violation of the Michigan Safe Drinking Water Act (SDWA). System Name is required to post the enclosed public notice in a conspicuous location throughout the distribution system as soon as practical but not later than 30 days from receipt of this notice. The posting shall remain for the duration of the violation. Schools and daycare centers must deliver a notice to parents/guardians in addition to posting at the facility.

Within 30 days of receipt of this notice System Name is to submit to this office:

1. A copy of the signed and dated public notice as verification consumers have been properly notified.
2. A corrective action plan and a timetable for compliance with the drinking water standard for PFAS.

System Name should investigate, in conjunction with the local health department, to find a permanent source that meets the drinking water standard. Replacing the source is the primary action in addressing the public health risk. If a suitable aquifer is not available, System Name shall minimize exposure to the extent possible and evaluate treatment technologies.

Please be aware, failure to comply with these requirements will result in further enforcement action. The SDWA allows for civil penalties of up to \$5,000 per day of violation. If you have any questions regarding this matter, you may contact me at phone or email during normal office hours.

If you have questions concerning this correspondence, please contact my office at Phone or Email. Thank you for your cooperation.

EXAMPLE LETTER

LHD: Remove or add information as needed.

Subject: Nitrate Annual Sample Reminder Notice
WSSN

Dear :

This letter is regarding the routine annual nitrate water sample needed to meet the requirements of the Michigan Safe Drinking Water Act, PA 399 of 1976. According to the monitoring requirements of System Name, a nitrate sample must be taken during the operating season. If you have not yet taken the water sample, please do so immediately.

Water sample bottles, sampling instructions and report forms are available from LHD. Water samples may be sent to any certified drinking water laboratory for testing; however, it is the owner/operator's responsibility to report the results to LHD. Make sure to write your WSSN (Water Supply Serial Number) on the sample form. You may not be credited with the sample results if you do not include your WSSN on your laboratory request form.

Failure to collect a water sample would be a violation of the Michigan Safe Drinking Water Act and may result in further enforcement including civil fines.

If you have any questions, please contact me at .

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Nitrate Maximum Contaminant Level (MCL) Violation at System Name
WSSN

Dear :

Under the provisions of the Safe Drinking Water Act, Act 399 of Public Acts of 1976, the EPA has set the Maximum Contaminant Level (MCL) for Nitrate at 10.0 milligrams per liter (mg/L). A water sample from System Name and Well number well was collected on Date and elevated levels of nitrate were detected at Concentration mg/L. As required a confirmation sample was collected on Date again finding elevated levels of nitrate at Concentration mg/L.

Water sampling at this facility indicates this drinking water standard has been exceeded and as the owner / operator of this water system, the follow is required:

- Water must not be made available for infants.
- Provide a safe alternative (bottled water) for those requesting it.
- Providing public notice is required. Please find attached a public notice provided for your use. Public posting must remain at all drinking water taps until further notice. A copy of the signed posting is to be returned back to the LHD within 14 days of receipt.
- Investigate, in conjunction with the local health department, to find a permanent source that meets the drinking water standard. Replacing the source is the primary action in addressing the public health risk.

If you have questions concerning this correspondence, please contact my office at Phone or Email. Thank you for your cooperation.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Nitrate Result Exceeding 10.0 mg/L at Name
Water Supply Serial Number (WSSN): WSSN

Dear _____ :

A water sample from Name was collected on Date and elevated levels of nitrate were detected at result mg/L. Under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and the Rules as amended, a confirmation sample is required within 24 hours of notification of the elevated result. Failure to collect the confirmation sample will result in a monitoring violation and issuance of a maximum contaminant level (MCL) violation.

The confirmation sample must be collected at the designated water sample tap per the sample siting plan on file.

Describe location

To ensure water results are linked to this supply, confirm that your laboratory forms are fully completed, including: collection date and time, WSSN, Sample Point ID, and sample purpose of "repeat". All nitrate samples must be tested by the laboratory within 48 hours of collection and meet temperature preservation requirements.

Submit a copy of the water results to this office as soon as you received them. Failure to collect nitrate confirmation samples will require public notice.

If you have any questions, please contact me at phone or email.

Noncommunity Water Supply Program
Nontransient Water Sample Waiver

System Name _____ WSSN _____

Waiver issuance shall be in accordance with Michigan Safe Drinking Water Act, 1976 Public Act 399 as amended.

Check only the applicable waiver(s)

Volatile Organic Compounds (VOC's)

- ☐ **Limited Scan Waiver:** Reduction in monitoring to 1 sample every 6 years. The following minimum criteria shall be evaluated in issuance of a VOC Limited Scan Waiver: Sample results, well construction, and proximity to contaminant source. Waiver shall only be effective for not more than 6 years.

Synthetic Organic Compounds (SOC's)

- ☐ **Limited Scan Waiver:** Reduction in monitoring to 1 sample every 6 years. The following minimum criteria shall be evaluated in issuance of a SOC Limited Scan Waiver: Sample results, well construction, and proximity to contaminant source. Waiver shall only be effective for not more than 6 years.

Complete Metals

- ☐ **Waiver:** Reduction in monitoring to 1 sample every 9 years. The following minimum criteria shall be evaluated in issuance of a Complete Metals Waiver: Satisfactory sample results from at least 3 rounds of 3 year monitoring.

Cyanide

- ☐ **Waiver:** Reduction in monitoring to 1 sample every 9 years. The following minimum criteria shall be evaluated in issuance of a Complete Cyanide Waiver: Satisfactory sample results from at least 3 rounds of 3 year monitoring.

Waiver Determination By:

Agency name

Date

Sanitarian name

Signature

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Maximum Contamination Level Violation for Arsenic at System Name
WSSN

Dear _____ :

Water samples taken from System Name water system detected arsenic at a concentration that exceeds the drinking water standard or maximum contaminant level (MCL) set forth by the United States Environmental Protection Agency (USEPA). In accordance with the federal requirements, the Michigan Safe Drinking Water Act (SDWA), 1976 PA 399, and rules as amended, includes a MCL for arsenic of 10 parts per billion (ppb). The running annual average of the arsenic concentration detected at this facility is concentration ppb as determined on date.

Therefore, System Name is in violation of the Michigan Safe Drinking Water Act (SDWA). System Name is required to post the enclosed public notice in a conspicuous location throughout the distribution system as soon as practical but not later than 30 days from receipt of this notice. The posting shall remain for the duration of the violation. Schools and daycare centers must deliver a notice to parents/guardians in addition to posting at the facility

Within 30 days of receipt of this notice you are to submit to this office:

1. A copy of the signed and dated public notice as verification consumers have been properly notified.
2. A corrective action plan and a timetable for compliance with the drinking water standard for arsenic.

Please be aware, this violation will be reported to the USEPA. Failure to comply with these requirements will result in further enforcement action. The SDWA allows for civil penalties of up to \$5,000 per day of violation. If you have any questions regarding this matter, you may contact me at phone or email during normal office hours.

EXAMPLE LETTER

LHD: Remove or add information as needed.

SUBJECT: Elevated Arsenic Result at Name
WSSN WSSN

Dear :

Water samples taken from the Name on date detected arsenic at a concentration of result parts per billion (ppb), which exceeds the drinking water standard or maximum contaminant level (MCL) set forth by the United States Environmental Protection Agency (USEPA) for arsenic of 10 ppb.

Due to the above result, monitoring frequency for arsenic has been increased to quarterly sampling. Calculation of arsenic compliance is based on a running annual average, utilizing arsenic results over four consecutive quarters.

Ensure samples are collected at the designated sample tap: . Upon receipt of future sample results, guidance will be provided by LHD.

If you have any questions regarding these changes, please contact me at phone or email.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Reduction in Arsenic Sampling at Name WSSN WSSN

Dear :

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and rules as amended, the water sampling requirements for the source water serving water supply have been reduced.

Routine sampling on date of initial high result found the presence of arsenic at initial result milligram per liter (mg/l). The maximum contaminant level (MCL) for this contaminant is 0.010 mg/l. That result required Name to collect quarterly samples for arsenic. Subsequent sampling found the following concentrations:

LHD use this area to type the dates and results of the last four quarters

The running annual average (RAA) concentration for arsenic over these four quarters was RAA mg/l.

Since the calculated average is less than the MCL the LHD requires Name to monitor the source water annually for arsenic.

If you have any questions regarding these changes, please contact me at phone or email.

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: October 20, 2003	Subject: Arsenic Treatment Systems and Compliance with the MCL		Category: ☐ Internal/Administrative
Revised Date:	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		☐ External/Noninterpretive
Reformatted Date: January 24, 2013	Number: ODWMA-399-020	Page: 1 of 8	☒ External/Interpretive

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

Community water supplies and nontransient noncommunity water supplies must comply with the arsenic maximum contaminant level of 0.010 milligram per liter (mg/l), or 10 parts per billion (ppb). This policy establishes criteria for the design, installation, maintenance, and monitoring of an arsenic removal treatment system.

AUTHORITY:

R 325.10601 (Rule 601), R 325.10604c (Rule 604c), and R 325.10710 (Rule 710) of the Administrative Rules adopted under the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), covering drinking water standards for specific contaminants, including inorganics, that shall be met by a supplier of water to assure the protection of public health. In addition, Section 325.1004(2) of Act 399 states, "Upon receipt of the plans and specifications for a proposed waterworks system, the department shall evaluate the adequacy of the proposed system to protect the public health by supplying water meeting the state drinking water standards."

STAKEHOLDER INVOLVEMENT:

Stakeholder input was solicited during informal meetings and public hearings held during the rule promulgation processes to adopt the arsenic rule of the National Primary Drinking Water Regulations as required by the Administrative Procedures Act, 1969 PA 306, as amended.

DEFINITIONS:

Community Water Supply (CWS) – A public water supply that provides year-round service to not fewer than 15 living units, or that regularly provides year-round service to not fewer than 25 residents. Examples include municipalities, such as cities, villages, and townships; apartment complexes; manufactured housing communities; condominiums; and nursing homes.

Nontransient Noncommunity Water Supply (NTNCWS) – A noncommunity supply that serves not fewer than 25 of the same individuals on an average daily basis more than six months of the year. Examples include places of employment, schools, and day care centers.

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Maximum Contaminant Level (MCL) – The maximum permissible level of a contaminant in water that is delivered to any user of a public water supply.

Operator In Charge (OIC) – A certified operator who is designated by the owner of a public water supply as the responsible individual in overall charge of a waterworks system, or portion of a waterworks system, who makes decisions regarding the daily operational activities of the system that will directly impact the quality or quantity of drinking water as defined in Rule 106.

Firm Capacity - As applied to wells, pumping stations, or units of treatment systems, means the production capacity of each respective part of the water system with the largest well, pump, or treatment unit out of service.

Entry Point to the Distribution System (EPTDS) – A point where treated water enters the distribution system, after treatment and before the first customer. In most cases, this is where public water systems collect samples to determine compliance with the arsenic standard. For purposes of this policy, the compliance sample location will be called the "entry point."

Point-of-Entry Treatment Device (POE) – A treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building as defined in Rule 107. These treatment devices are usually installed on the service line as it enters a building.

Point-of-Use Treatment Device (POU) – A treatment device applied to a single tap used for the purpose of reducing contaminants in the drinking water at that one tap as defined in Rule 107. These treatment devices are usually installed near or at the kitchen tap. POU's are not allowed for compliance purposes for CWSs in Michigan because they are not protective of the entire household.

POLICY:

Monitoring Requirements

The arsenic rule requires monitoring for arsenic at each entry point once every three years for groundwater systems and annually for surface water systems. Systems with an entry point result over 10 ppb must collect quarterly samples at that sampling point. If the running annual average (RAA) after four quarters is greater than 10 ppb, the system exceeds the MCL.

Each new source must comply with the 10 ppb MCL before the source begins serving water to the public. Samples collected during the pump testing of the source (well) may be used to determine initial compliance. If the new source has arsenic levels over 10 ppb, the source may not serve the public until a treatment system, permitted and approved by the ODWMA, is installed.

If a water system plans to temporarily (not intermittently) use a standby or emergency source of water that has arsenic levels over 10 ppb, or plans to bypass or take out of service an arsenic treatment unit that will allow water to go to the distribution system with arsenic levels over 10 ppb, the system must contact the ODWMA immediately. Also, the system should issue a public notice to the affected water customers, preferably at the time the source is placed in service.

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Compliance Calculations

For systems monitoring more than once per year, compliance with the MCL is determined by an RAA at each entry point or other sampling point approved by the ODWMA. Systems monitoring annually or less frequently whose result exceeds 10 ppb must increase monitoring to quarterly. Systems triggered into increased monitoring will not be considered in violation of the MCL until they have completed one year of quarterly sampling. If any sample result causes the RAA to exceed the MCL at any sampling point (i.e., the result is greater than four times the MCL) the system is out of compliance with the MCL immediately.

Systems must not monitor more frequently than specified by the ODWMA to determine compliance unless they have applied to and obtained approval from the ODWMA. If a system does not collect all required samples when compliance is based on an RAA of quarterly samples, compliance will be based on the RAA of samples collected. If a sample result is less than the method detection limit, zero will be used to calculate the RAA.

The ODWMA may require confirmation samples for any results. All confirmation samples approved to be collected by the ODWMA within a specific monitoring period will be averaged with the original result to calculate a quarterly average. The quarterly averages will be used to determine the RAA.

A water system that violates the MCL must contact the ODWMA within 48 hours under Rule 734. A Tier 2 public notice must be issued in accordance with Rule 403 and Rule 405 as soon as possible, but no later than 30 days after the violation has occurred.

Design, Operation, Oversight, and Monitoring of Arsenic Removal Treatment Systems

Many treatment technologies are available to remove arsenic. Treatment options consist of coagulation/filtration, coagulation assisted microfiltration, lime softening, activated alumina, ion-exchange (anion), oxidation/filtration, and adsorptive/absorptive filter medias. Emerging treatment technologies may be considered. Water supplies planning to install an arsenic removal system may be required to run pilot studies. If a pilot study is not going to be completed, documentation must be submitted to the ODWMA showing adequate treatment of water at other water systems using the same type of proposed treatment and having similar raw water quality.

The design of arsenic removal systems is based on the number and location of wells, disposal options, and the proposed treatment technology. Treatment systems may be installed in parallel, in series, and as a single pass or multiple pass configurations. The design must accommodate taking treatment systems out of service periodically for routine maintenance and/or repair. Below are typical system layouts and items to consider when designing an arsenic removal system for each scenario.

Systems with several EPTDSs (i.e., two or more wells with each well located in a separate well house) -The firm capacity rating of the entire arsenic removal system must be greater than or equal to the firm capacity rating of the water system. Systems are strongly encouraged to install treatment systems at each EPTDS that may exceed the 10 ppb standard. While systems are not required to have redundant treatment units at each EPTDS, the rated capacity of the treatment units at each EPTDS should must be greater than or equal the raw water capacity serving that particular EPTDS.

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Systems with one EPTDS (i.e., two or more wells that have a common well house or one treatment plant) – As a minimum, two treatment units must be installed. The capacity of the entire arsenic removal system must be greater than or equal to the firm capacity rating of the water system. The preferred design is to have the firm capacity rating of the treatment system equal the firm capacity rating of the water system. This allows one unit to be off-line while the on-line unit(s) meet maximum day demands.

If an existing system has just one treatment unit, and the unit is satisfactorily removing arsenic below 10 ppb, a second treatment unit will not be required until major upgrades or improvements are needed to the treatment system.

Blending Options – This option is available for systems that have some sources of water (wells) above and some below 10 ppb of arsenic, and should only be considered in unusual circumstances. The water of two or more wells are blended before entering the distribution system to keep arsenic levels less than 10 ppb. For example, water from one well with arsenic of 2 ppb is blended with water from another well with arsenic of 14 ppb. If the wells have similar pumping capacities, the resulting arsenic concentration is 8 ppb, which meets the standard. The blending of water must take place prior to entering the distribution system and operational guidelines for using this option must be reviewed and approved by the ODWMA before being implemented. Using this option may reduce the firm capacity rating of the water systems since two blended wells may be considered as one pumping unit.

POUs and POEs – Due to capital and operational costs, this option should only be considered by small systems, typically fewer than 100 service connections. POU's are usually installed near or at the kitchen sink and are not allowed for compliance for CWSs. POEs are installed on the service line as it enters a building. POE treatment units must be owned, controlled, and maintained by the public water supply and must be equipped with alarms to indicate the unit has failed or is not operating properly. All or 100 percent of customers must participate for a system to be eligible for this option. If the American Standards National Institute/NSF International has issued product standards applicable to a specific type of POE treatment device, units meeting those standards shall be used. Review the supply's POE operational oversight and monitoring plans before approving POE devices.

Operation and Oversight - Systems with arsenic removal treatment units must designate an OIC and backup operator under Rule 1905. The OIC must hold, as a minimum, a limited treatment or "D" certification. Establish a schedule of regular visits to the water supply in accordance with the ODWMA's Policy and Procedure Number ODWMA-399-017, Community Water Supply Systems-Required Operations Oversight.

Monitoring – Monitoring of treatment systems will be determined on a case-by-case basis at the discretion of the ODWMA. Upon start-up, individual treatment units (i.e., each filter) should be sampled at least once per week. Over time, the weekly sampling may be reduced or eliminated and replaced with monthly entry point monitoring. Samples collected at each treatment unit effluent may be analyzed by either a certified lab or a field test kit acceptable to the ODWMA, while compliance samples must be analyzed at a laboratory certified for arsenic analysis. Compliance monitoring at each EPTDS for supplies that have arsenic removal systems shall not be reduced to less frequently than quarterly. Refer to the example sampling scenarios attached to this policy for additional guidance.

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Disposal of Waste Streams – Arsenic removal systems are periodically backwashed or regenerated. Disposal of the backwash or regeneration water depends on the treatment used and the characteristics of the backwash water. Disposal options include pumping to an existing sanitary sewer line, groundwater discharge or surface water discharge. Approval for groundwater and/or surface water discharges may require additional permits from the DEQ. For further information, refer to the ODWMA's Policy and Procedure number ODWMA-399-023 Disposal of Backwash Water from Arsenic Removal Units.

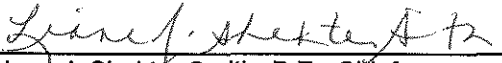
PROCEDURE:

WHO	DOES WHAT
District Staff	Incorporates this policy and procedure as part of the permit process to construct arsenic treatment systems and uses this policy and procedure to evaluate proposals from consulting engineers, developers, and water systems.
District Staff	Returns to the applicant, plans, specifications, and/or permit applications for arsenic treatment systems that are inadequate in design or application.
District Staff	Reviews arsenic monitoring results collected by the water systems and operational data for the treatment system to determine compliance with the MCL.

REFERENCES:

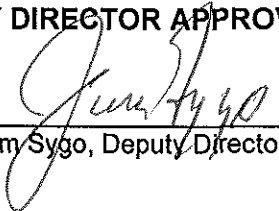
Safe Drinking Water Act, 1976 PA 399, as amended, being MCL 325.1001 *et seq.*, and the administrative rules promulgated thereunder, being R 325.10101 *et seq.*

OFFICE CHIEF APPROVAL:


Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

1/18/2013
Date

DEPUTY DIRECTOR APPROVAL:


Jim Sygo, Deputy Director

1/24/2013
Date

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**EXAMPLES – ARSENIC REMOVAL SYSTEM DESIGN, MONITORING, AND
OPERATIONAL OVERSIGHT**

Example No. 1: One Entry Point – a water supply has two wells, each 100 gallons per minute (gpm) and share a common well house (i.e., one EPTDS). Arsenic levels at both wells are over 10 ppb. The firm capacity rating of 100 gpm is adequate to meet maximum day demands. The firm capacity rating of the treatment system should be greater than or equal the firm capacity rating of the water system.

Design – Two arrangements are possible. Both allow one treatment unit to be taken off-line while still meeting maximum day demands.

- Install three, 50 gpm treatment units (adsorptive media, activated alumina, etc.) in parallel within the well house, which results in a total treatment capacity of 150 gpm and a firm capacity rating of 100 gpm.
- Install two 100 gpm treatment units in parallel that results in a total treatment capacity of 200 gpm and a firm capacity rating of 100 gpm.

Oversight – For D-4 systems, an OIC shall visit the water treatment facilities at least once per week. For D-1, D-2, and D-3 systems, the OIC shall visit the water treatment facilities daily. Initially, effluent from each treatment unit (filter) should be tested weekly for arsenic using a field test kit. A quarterly entry point sample shall be collected and submitted and analyzed at a laboratory certified for arsenic analysis. It is recommended that a split sample should be tested with the field test kit at the same time the quarterly entry point sample is collected for verification analysis.

If a treatment unit effluent sample result is greater than 10 ppb, the treatment unit shall be taken out of service immediately and a sample collected from the entry point and submitted to a state approved laboratory for arsenic analysis. If backwashing does not return the concentration to less than 10 ppb, the treatment unit shall remain out of service until the arsenic concentration in the effluent meets the MCL.

After a period of satisfactory operation and operator oversight, the weekly testing of each filter and quarterly sampling of the entry point may be replaced with monthly entry point sampling. The monthly samples must be analyzed at an approved lab and all samples will be used to determine compliance. If monthly entry point sampling indicates the arsenic level is increasing, sampling of each filter should resume.

Example No. 2: Several Entry Points – a water system has four wells (100, 200, 250, and 300 gpm) located in different locations within separate well houses (i.e., four EPTDS's). All the wells have arsenic levels over 10 ppb. The firm capacity of the water system (550 gpm) is adequate to meet maximum day demands. The firm capacity rating of the treatment system must equal the firm capacity rating of the water system.

Design – Install treatment units in each well house in some combination so the capacity is greater than or equal to the well capacity serving that well house. For example, install three, 100 gpm treatment units or one 300 gpm unit in the well house where the 300 gpm well is located. This

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arrangement allows either the largest capacity well or the largest capacity treatment unit to be taken out of service while still meeting maximum day demands.

Oversight – Operational oversight and sampling of each treatment unit is the same as Example No. 1.

Example No. 3: One Entry Point with Existing Iron Removal - a water system has four wells (200, 250, 350, and 400 gpm) that pump to a common pipe that leads to an existing iron/arsenic treatment plant, which consists of one 1,200 gpm treatment unit (i.e., one EPTDS). All of the wells have arsenic levels over 10 ppb. The firm capacity of the wells (800 gpm) and the total capacity of the treatment plant are adequate to meet maximum day demands.

Design - A single treatment unit means the system's firm capacity rating is 0 gpm. Though not preferred, this design is allowed if the existing treatment system is reliably and consistently removing arsenic to below 10 ppb. When major improvements are needed to the treatment system, a minimum of two treatment units equal to the firm capacity of the system will be required.

Oversight – For D-4 systems, the OIC must visit the plant weekly. For D-1, D-2, and D-3 systems, the OIC must visit the plant daily. The entry point should be sampled weekly using a field test kit. A quarterly entry point sample shall be collected and analyzed at a laboratory certified for arsenic analysis. It is recommended that a split sample should be tested with the field test kit at the same time the quarterly entry point sample is collected for verification analysis. Quarterly sampling may be reduced to monthly entry point sampling with the monthly samples analyzed at an approved lab and all samples will be used for compliance determinations.

Example No. 4: Blending – a water system has two wells, one well with an arsenic concentration of 2 ppb and the other with an arsenic concentration of 14 ppb. The wells have equal pumping capacities and pump to a common pipe before entering the distribution system. Therefore, the resulting arsenic concentration when both wells are operating is 8 ppb.

Design – In this case, treatment must be installed on the source with arsenic levels of 14 ppb. If treatment is not an option, waive the requirement only if the following criteria are met. The telemetry or well system controls must be set so both wells operate simultaneously to achieve adequate blending and dilution. Water meters or hour meters shall be installed for each well to ensure both wells pump the same amount of water. The supply must assume that the well with the lower arsenic level will eventually be out of service leaving the supply with only the higher arsenic level well. Therefore, treatment at sources of high arsenic levels is preferred.

Oversight – For D-4 systems, the OIC must visit the plant weekly. For D-1, D-2, and D-3 systems, the OIC must visit the plant daily. Both wells and the entry point should be sampled monthly using a field test kit. The entry point must also be sampled quarterly and submitted to a state approved lab for MCL compliance determination. It is recommended that a split sample should be tested with the field test kit at the same time the quarterly entry point sample is collected for verification analysis.

Example No. 5: POE – a 30-home subdivision has two wells that both have arsenic levels over 10 ppb. The homeowners have chosen to install POEs in each home to comply with the arsenic MCL.

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All 30 homeowners have agreed to participate.

Design – The POEs must be installed on the service lines entering the homes and all units must be owned, controlled, and maintained by the owner of the water system (homeowners association, developer, private utility company, etc.). All treatment units must have alarms indicating that the unit is not working properly or has reached its maximum design life.

Oversight – Since this is a D-4 system, the OIC must visit the water system weekly. Approximately 10 percent of the treatment units shall be sampled quarterly and analyzed at a laboratory certified for arsenic analysis. The quarterly sampling should be rotated among the homes so that every unit is sampled at least once every three years.

If any sample result exceeds 10 ppb, a confirmation sample must be collected from the same location as soon as possible. If the confirmation sample also exceeds 10 ppb, that particular treatment unit must be replaced or repaired immediately and all other units must be scheduled for repair or replacement as soon as possible.

LEAD AND COPPER SAMPLE REPORT FORM

Issued under authority of 1976 PA 399, MCL 325.1001 et al., and Administrative Rules, as amended (Act 399). Failure to submit this information is a violation of Act 399 and may subject the water supply to enforcement penalties. Administrative Rule R 325.10710d requires water supplies to report lead and copper monitoring information within 10 days after the end of the monitoring period. This form may be used to meet this requirement.

Water Supply Name: _____ WSSN: _____

Population: _____ Monitoring period: From: _____ To: _____

Number of compliance samples required: (1L first draw) _____

Number of compliance samples collected: _____

Name of Certified Laboratory: _____

Examples are given in parenthesis

Building Name (High School)	Fixture Type (Fountain)	Fixture Location (Art Room)	Sample Date and Time	Lead Result in mg/L	Copper Result in mg/L

Drinking water fixtures were sampled according to the approved sample siting plan: ☐Yes ☐No

Are the same sampling points used as in the previous monitoring period? (If marked "No", provide comment below): ☐Yes ☐No

Comments:

Name of water system official reporting results: _____

Date _____ Telephone _____ Email _____

Certification: I certify that this public water supply has provided the consumer notice of lead result to persons served at each of the taps that was tested, either by mail or by another method approved by the DEQ, within 30 days of knowing the result. The Notice included required content

Complete form, attach copies of lab results and submit to the local health department.

Noncommunity DSMI Service Line Certification Form

The following list represents the materials that are typically used for noncommunity water well service lines. Please indicate below the water service line material(s) for System Name, WSSN

- ☐ Plastic
- ☐ Copper
- ☐ Galvanized Steel
- ☐ Lead
- ☐ Other/Combination - *Please explain material(s)*

A visual scratch test may be carried out to help in the determination of service line material (see website: LSLR-Collaborative.org/Identifying-Service-Line-Material.html). For additional assistance in determining your water service line materials, contact a Michigan registered water well drilling contractor.

Preliminary DSMI is complete when:

Visually determined the service line material at System Name and indicated the service line material(s) in the checklist above.

Describe any documentation or other resource used to support your determination of the service line material type: _____

Certification of Preliminary Distribution System Materials Inventory

I certify that I have reviewed available documentation related to the materials in the service line(s) at System Name and that the information herein is accurate and complete to the best of my knowledge.

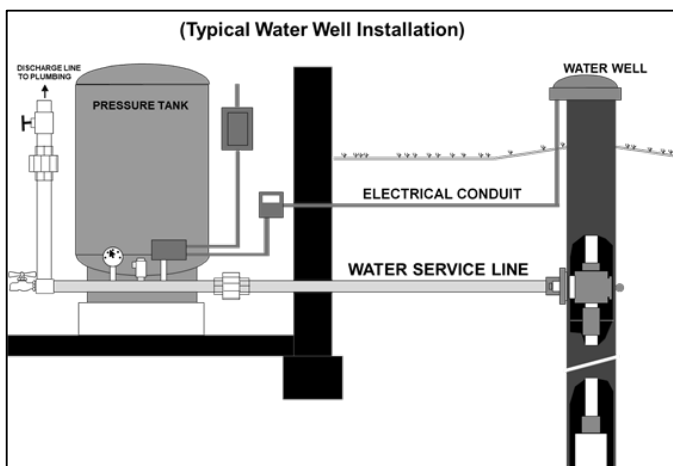
Signature

Date

Print Name

Title

Submit a copy of the signed document by e-mail to LHD email address or fax at _____ by **Date**.



Lead and Copper Sample Results 90th Percentile Value Determination Worksheet

#	Lead Results	Instructions	Copper Results
1		← Enter all samples starting with lowest result →	
2		If fewer than 5 samples are taken, the sample result with the highest concentration is considered the 90 th percentile value. What is the highest result for Lead? _____ What is the highest result for Copper? _____	
3			
4			
5		← 90 th percentile of 5 samples is average of 4 th and 5 th →	
6		What is the Lead 90th percentile? _____ What is the Copper 90th percentile? _____	
7			
8			
9		← 90 th percentile of 10 samples is result for sample #9 →	
10			
11		NOTE: You can compute 90 th percentile by multiplying the number of samples by .9 (i.e., 10 samples x .9 = 9; the result for the 9 th sample is the 90 th percentile. For non-whole numbers interpolation is necessary).	
12			
13			
14			
15			
16			
17			
18		← 90 th percentile of 20 samples is result for sample #18 →	
19			
20			

Tip Elsewhere, use a blank spreadsheet to sort the results (in mg/L) from lowest to highest. Then paste them to the right.

Enter ND and <0.001 as 0.000

Lead and Copper 90th Percentile Calculator		
Number of verified samples=		1
Rank of 90% of samples =		0.9
Lower Sample=		0
Upper Sample=		1
Result of sample ranked as Lower Sample	Lower Result (mg/L)=	
Result of sample ranked as Upper Sample	Upper Result (mg/L)=	
90th Percentile Value (mg/L)		

Rank	Result (mg/L)	Location
1	0	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
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EXAMPLE LETTER

LHD: Remove or add information as needed. Coordinate with EGLE when drafting this letter.

RE: System Name, WSSN
Lead and Copper Monitoring – Lead Action Level (AL) Exceedance

Dear _____ :

System Name exceeded the AL for lead during the most recent round of lead and copper monitoring of drinking water taps from date to date. An AL exceedance is not a violation but triggers other requirements under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (SDWA). Requirements of the SDWA include water quality parameter (WQP) monitoring, source water monitoring, and corrosion control treatment or study.

The compliance samples collected on date are summarized below:

Maximum Contaminant Level Goal ¹ (MCLG)	Enforceable Action Level (AL) Exceedance	Number of samples at or below the AL	Number of samples above the AL	90th Percentile	Typical Sources of Contamination
0 mg/L	0.015 mg/L or 15 ppb			mg/L or ppb	Corrosion of Plumbing Systems; Erosion of Natural Deposits

¹Maximum contaminant level goal (MCLG) means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Health Effects

Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Issue a Public Advisory – No later than DATE (3) business days of learning the results. If already completed, enter "Completed") (Select one of the following sections below)

LHD: Use this paragraph when combining PA and PE

An amendment to Act 399 on March 29, 2017, requires a public water supply to issue a Public Advisory (PA) within three business days to inform all persons served about the lead AL exceedance. It is the intent of this department to work with you to develop the materials to distribute to your customers to fulfill both the PA and public education (PE) requirements simultaneously. Enclosed with this letter are draft materials and a checklist to document the PA and PE distribution activities.

LHD: Use this paragraph for PA only

An amendment to Act 399 on March 29, 2017, requires a public water supply to issue a Public Advisory (PA) within three business days to inform all persons served about the lead AL exceedance. It is the intent of this department to work with you to develop the PA materials to ensure it complies with the requirements set forth in Act 399. Enclosed with this letter is a checklist to document the PA distribution activities.

Return a signed copy of the Certificate of Distribution to LHD immediately after performing PA but no later than DATE (10 days after end of period that PA is required.), along with a copy of your PA materials.

Distribute Public Education (PE) – No later than DATE (60 days after date that ALE was calculated or end of monitoring period that exceeded AL, which ever comes first; e.g., November 30 after June to September monitoring period)

Deliver PE materials to all consumers. This is intended to educate consumers about lead health effects, sources, and steps to minimize exposure. PE material has required content and language, must be posted in a

public place or common area in each building served, and distributed to each person served via a newsletter or correspondence. Enclosed is a customizable template to meet the requirements.

Return a signed copy of the Certificate of Distribution to the LHD immediately after performing PE but no later than DATE (10 days after end of period that PE is required, e.g., a June to September monitoring period requires PE delivery by November 30 and certificate to the LHD by December 10), along with a copy of your PE materials.

Deliver Consumer Notice of Lead and Copper Results – No later than DATE (30 days of learning the results. If already completed, enter "Completed")

Within 30 days of learning the results, you need to provide individual lead and copper tap results to the people who receive water from your water supply sites that were sampled. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is providing the necessary documents for the Consumer Notice. You will receive those in a separate mailing. Once you have provided consumer notice, send EGLE a certification that you met all the delivery requirements by date.

Conduct WQP Monitoring – No later than DATE (no later than 6 months after start of monitoring period that exceeded AL; e.g., November 30 after the June to September monitoring period, review Rule 710b(3)(a) for number of WQP sample sites within distribution system)

Collect number WQP sample sets. WQP sampling consists of analyzing for pH, alkalinity, calcium, chloride, sulfate, conductivity, and water temperature. They also include orthophosphate when an inhibitor containing a phosphate compound is used, and silica, when an inhibitor containing a silica compound is used. The pH, temperature and conductivity can be done at the sample site with a properly calibrated instrument.

WQP sample collection method and locations: These are not first-draw samples.

- Collect WQP samples from the entry point to the distribution system (before treatment) with the well pump running.
- Collect WQP samples from describe the locations.

Continual WQP monitoring will be required quarterly until the LHD determines WQP monitoring is no longer required.

Conduct Source Water Monitoring – No later than DATE (6 months after end of monitoring period that exceeded AL, e.g., March 31 after a June to September monitoring period)

Collect one sample for lead and copper at each entry point to the distribution system. This is NOT a first draw sample. Flush the raw water sample tap by the pressure tank until the well pump is running to collect a sample from this tap that is representative of the groundwater. The purpose of this sampling is to demonstrate that there is no lead or copper in the groundwater or the water well, and to rule this out as a source of lead. This is test code CCUB if you use the EGLE Drinking Water Analysis Laboratory.

If you use the EGLE Laboratory, order bottles by calling 517-335-8184 or downloading the *Bottle Order Form* from www.michigan.gov/eglelab. Under the menu, click "Drinking Water" to get to the Drinking Water Analysis Laboratory webpage. There you will find links for *Drinking Water Test Fees*, *Obtaining the Necessary Sampling Units*, *Bottle Order Form (EQP2301)*, and *Request for Water Analysis Form (EQP2300)*. Request the analyses using the following test codes:

Test Code	Bottle Number	Test Description
CORR	33	Conductivity, Alkalinity, Phosphate, and Calcium
CPH	33	pH Determination
CCUB	36	Lead/Copper for corrosion control
R	32	Chloride, Sulfate

Begin to Correct the Problem – No later than DATE (6 months after end of monitoring period that exceeded AL, e.g., March 31 after a June to September monitoring period)

You must **propose a corrosion control treatment plan OR propose to perform a corrosion control study** in writing to LHD. This is to minimize lead and copper in drinking water by reducing corrosion of water pipes and plumbing materials.

Corrosion Control Treatment Plan (Treatment Plan): This option would be selected if a system chooses to proceed directly to selecting a treatment process. The steps involved in selection, installation, operation, and monitoring of such a treatment system are complex. A qualified consultant is necessary. If treatment is System Name preferred option or is found to be necessary after a corrosion control study, a proposal and permit application must be submitted. The treatment technology selection must be based on data such as the WQP sample results and any existing treatment systems. After treatment is installed, the water supply must: be operated by a D-5 level drinking water certified operator, submit monthly operation reports, perform ongoing WQP sampling in the treated water, and meet any other applicable requirements for the treatment option selected. Contact us for guidance on treatment options and for more information regarding the additional ongoing operation, maintenance, and oversight required for utilizing a corrosion control treatment system.

Corrosion Control Study (Study): A Study would evaluate the effectiveness of different treatment options such as pH, alkalinity, or hardness adjustment; or injection of a corrosion control chemical such as phosphate or silicate in preventing the leaching of plumbing materials into the water. System Name would evaluate these corrosion control treatment processes using information such as water chemistry, physical tests such as pipe loop tests, or coupon tests as described in Rule 604f(3) of the SDWA. A water quality consultant will still be necessary. A Study allows systems enough time to select an appropriate treatment process to install.

Corrosion control specified in the SDWA is generally geared towards municipal water supply plants, which supply water to private residences with privately owned piping. Since System Name owns the entire distribution system, an alternate option within the Study is to pursue “investigative study and plumbing material replacement” to reduce the amount of lead in the drinking water.

For the Study option, System Name would complete an investigative study by performing first-draw lead and copper sampling at every potential drinking water location to identify all taps that exceed the AL. Chrome-plated brass bubblers and faucets, brass fittings and valves, and lead soldered fittings have been shown to contribute to high lead water test results. Replace the exceeding fixture(s) and all connecting plumbing that can be accessed, with new, low-lead products. Then, perform confirmation sampling on all replaced fixtures to demonstrate that water from these new taps is below the lead AL.

If, after the investigative study and plumbing material replacement, all drinking water fixtures are below the lead and copper AL, System Name would be allowed to cease installing optimal corrosion control treatment under Rule 604f(2)(c). If material replacement is not pursued or if it is not successful, corrosion control treatment required by the SDWA will be required. Experience has shown that plumbing material replacement for noncommunity water supplies is the preferred first step (or option) within a corrosion control study.

Lead and Copper Monitoring

If System Name proceeds with an investigative study and plumbing material replacement, compliance monitoring will begin after identified fixtures and connecting plumbing is replaced and the confirmation sampling is complete. Contact LHD in writing before starting the compliance monitoring. Select the same sites used in previous monitoring periods, unless the sample siting plan has been changed with LHD. All monitoring, reporting, consumer notification, and EGLE certification requirements remain in effect.

In Conclusion

Plumbing material replacement has been demonstrated at many noncommunity water supplies to protect public health without the need for treatment installation and the ongoing operation and maintenance.

If you can show that both lead and copper ALs are met in two consecutive six-month periods, LHD may determine the study and installation of treatment can be discontinued. In the meantime, **you must propose a**

Treatment Plan or propose to perform a Study (investigative study with plumbing material replacement) by the dates above. If treatment is found to be necessary, it must be installed.

As stated earlier, the AL is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water supply shall follow. If water from the tap does exceed this limit, then the facility must take certain steps to correct the problem. Because lead may pose a serious health risk, the U.S. Environmental Protection Agency set an MCLG of zero for lead. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. In addition to the replacement of fixtures over 0.012 mg/L lead, replacing fixtures approaching this level, aerator cleaning to remove any particulate lead, and routine flushing to avoid excessive stagnation should be considered.

LHD and EGLE are partnering to help in implementing these regulations. If you have any questions regarding treatment as a means of corrosion control, please contact this office for the name of an EGLE engineer.

Sincerely,

Enclosures

Items that might be sent to supply, depending on situation

PA Template

PE Template

PA Certificate of Distribution

PE Certificate of Distribution

Tracking Form

cc: Director, LHD
Certified Operator
Dan Dettweiler, EGLE
District Rep, EGLE

EXAMPLE LETTER

LHD: Remove or add information as needed. Coordinate with EGLE when drafting this letter.

RE: System Name, WSSN
Lead and Copper Monitoring – Copper Action Level (AL) Exceedance

Dear _____ :

System Name exceeded the AL for copper during the most recent round of lead and copper monitoring of drinking water taps from date to date. An AL exceedance is not a violation but triggers other requirements under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (SDWA). Requirements of the SDWA include water quality parameter (WQP) monitoring, source water monitoring, and corrosion control treatment or study.

The compliance samples collected on date are summarized below:

Maximum Contaminant Level Goal ¹ (MCLG)	Enforceable Action Level (AL) Exceedance	Number of Samples at or Below the AL	Number of Samples Above the AL	90th Percentile	Typical Sources of Contamination
1.3 mg/L	1.30 mg/L or 1300 ppb			mg/L or ppb	Corrosion of Plumbing Systems; Erosion of Natural Deposits

¹Maximum contaminant level goal (MCLG) means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Health Effects

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Deliver Consumer Notice of Lead and Copper Result(s) – No later than DATE (30 days of learning the results. If already completed, enter "Completed")

Within 30 days of learning the results, you need to provide individual lead and copper tap results to the people who receive water from your water supply sites that were sampled. You must also send the Michigan Department of Environment, Great Lakes, and Energy (EGLE) a certification that you met all the delivery requirements by date.

Conduct WQP Monitoring – No later than DATE (no later than 6 months after start of monitoring period that exceeded AL; e.g., November 30 after the June to September monitoring period, review Rule 710b(3)(a) for number of WQP sample sites within distribution system)

Collect _____ WQP samples.

WQP sampling consists of analyzing for pH, alkalinity, calcium, chloride, sulfate, conductivity, and water temperature. They also include orthophosphate when an inhibitor containing a phosphate compound is used, and silica, when an inhibitor containing a silica compound is used. The pH, temperature and conductivity can be done at the sample site with a properly calibrated instrument.

WQP sample collection method and locations: These are not first-draw samples.

- Collect WQP samples from the entry point to the distribution system (before treatment) with the well pump running.
- Collect WQP samples from describe the locations.

Continual WQP monitoring will be required quarterly until the LHD determines WQP monitoring is no longer

required.

Conduct Source Water Monitoring – No later than DATE (6 months after end of monitoring period that exceeded AL, e.g., March 31 after a June to September monitoring period)

Collect one sample for lead and copper at each entry point to the distribution system. This is NOT a first draw sample. Flush the raw water sample tap by the pressure tank until the well pump is running to collect a sample from this tap that is representative of the groundwater. The purpose of this sampling is to demonstrate that there is no lead or copper in the groundwater or the water well, and to rule this out as a source of copper. This is test code CCUB if you use the EGLE Drinking Water Analysis Laboratory. If you use the EGLE Laboratory, order bottles by calling 517-335-8184 or downloading the *Bottle Order Form* from <http://michigan.gov/eglelab>. Under the menu, click Drinking Water to get to the Drinking Water Analysis Laboratory webpage. There you will find links for *Drinking Water Test Fees*, *Obtaining the Necessary Sampling Units*, *Bottle Order Form (EQP2301)*, and *Request for Water Analysis Form (EQP2300)*. Each WQP sample set is analyzed from one sample bottle per location. Request the analyses using the following test codes:

Test Code	Bottle Number	Test Description
CORR	33	Conductivity, Alkalinity, Phosphate, and Calcium
CPH	33	pH Determination
CCUB	36	Lead/Copper for corrosion control
R	32	Chloride, Sulfate

Begin to Correct the Problem – No later than DATE (6 months after end of monitoring period that exceeded AL, e.g., March 31 after a June to September monitoring period)

System Name must **propose a corrosion control treatment plan OR propose to perform a corrosion control study** in writing to the LHD. This is to minimize lead and copper in drinking water by reducing corrosion of water pipes and plumbing materials.

Corrosion Control Treatment Plan (Treatment Plan): This option would be selected if a system chooses to proceed directly to selecting a treatment process. The steps involved in selection, installation, operation, and monitoring of such a treatment system are complex. A qualified consultant is necessary. If treatment is System Name preferred option or is found to be necessary after a corrosion control study, a proposal and permit application must be submitted. The treatment technology selection must be based on data such as the WQP sample results and any existing treatment systems. After treatment is installed, the water supply must: be operated by a D-5 level drinking water certified operator, submit monthly operation reports, perform ongoing WQP sampling in the treated water, and meet any other applicable requirements for the treatment option selected. Contact EGLE for guidance on treatment options and for more information regarding additional ongoing operation, maintenance, and oversight required for utilizing a corrosion control treatment system.

Corrosion Control Study (Study): A Study would evaluate the effectiveness of different treatment options such as pH, alkalinity, or hardness adjustment; or injection of a corrosion control chemical such as phosphate or silicate to prevent the leaching of plumbing materials into the water. System Name would evaluate these corrosion control treatment processes using information such as water chemistry, physical tests such as pipe loop tests, or coupon tests as described in Rule 604f(3) of the SDWA. A water quality consultant will still be necessary. A Study allows systems enough time to select an appropriate treatment process to install.

Corrosion control specified in the SDWA is generally geared toward municipal water supply plants, which supply water to private residences with privately owned piping. Since System Name owns the entire distribution system, an alternate option within the Study is to pursue “investigative study and plumbing material replacement” to reduce the amount of copper in the drinking water.

For this alternate option, System Name could complete an investigative study by performing first-draw lead and copper sampling at every potential drinking water location to identify all taps that exceed the AL. Replace the exceeding fixture(s) and all connecting plumbing that can be accessed, with new, low-lead products. Then, perform confirmation sampling on all replaced fixtures and plumbing to demonstrate water from the new

plumbing is below the copper AL.

If, after the investigative study and plumbing material replacement, all drinking water fixtures are below the copper AL, System Name would be allowed to cease installing optimal corrosion control treatment under Rule 604f(2)(c). If material replacement is not pursued or if it is not successful, corrosion control treatment required by the SDWA will be required. Experience has shown that plumbing material replacement for noncommunity water supplies is the preferred first step (or option) within a corrosion control study.

Lead and Copper Monitoring

If System Name proceeds with an investigative study, treatment modifications, and/or plumbing material replacement, compliance monitoring will begin after changes have occurred and the confirmation sampling is complete. Contact LHD in writing before starting the compliance monitoring. Select the same sites used in previous monitoring periods, unless the sample siting plan has been updated by LHD.

In Conclusion

Plumbing material replacement has been demonstrated at many noncommunity water supplies to protect public health without the need for treatment installation and ongoing operation and maintenance.

All monitoring and reporting requirements remain in effect. If the ALs are met during two consecutive six-month monitoring periods, LHD may determine the study and installation of treatment can be discontinued. In the meantime, **you must propose a Treatment Plan or propose to perform a Study by the dates above.** If treatment is found to be necessary, it must be installed. As stated earlier, the AL is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water supply shall follow. If water from the tap does exceed this limit, then the facility must take certain steps to correct the problem.

LHD and EGLE are partnering to help in implementing these regulations. If you have any questions regarding treatment as a means of corrosion control, please contact this office for the name of an EGLE engineer.

Items that might be sent to supply, depending on situation

Tracking Form

Consumer Notice

CC: EH Director, LHD
Certified Operator
Dan Dettweiler, EGLE
District Representative, EGLE

Summary of ALE Requirements

Complete By	Requirement	Comments	Act 399 Rule Citation
Recommended as soon as possible No later than 3 business days from date ALE was determined AL	Distribute a Public Advisory for lead ALE	Distribute a public advisory to inform all persons served by the water supply of the lead AL exceedance. Distribution of the notice must be in a form and manner designed to fit the specific situation and must be reasonably calculated to reach all persons served by the public water supply. System may perform PE in conjunction with PA.	Sec.325.10 19 (2)
Recommended as soon as possible No later than 60 days from date ALE was determined or end of monitoring period that exceeded, which ever is first AL	Perform lead PE activities, including delivering PE materials to all consumers.	PE required activities are listed in the enclosed template and checklist. Repeat every year until the lead AL is met in the most recent round of sampling.	Rule 410(1) & 410(3)(d)
Recommended as soon as possible No later than 30 days of learning of the results	Deliver <i>Consumer Notice of Lead and Copper Results</i> to persons served at each site tested within 30 days of knowing the result.	Form is available from the EGLE and will be mailed to you when the EGLE is notified of test results.	Rule 410(5)(b)
Recommended as soon as possible No later than 3 months after the end of the monitoring period	Send certification of <i>Consumer Notice of Lead and Copper Results</i> to EGLE.		
Immediately after performing PE, but no later than 10 days after end of period that PE is required	Send certification of PE compliance to LHD, along with a sample copy of the materials delivered.	Sample certification enclosed. Required whenever PE is required.	

Complete By	Requirement	Comments	Act 399 Rule Citation
Recommended as soon as possible No later than 6 months after start of monitoring period that exceeded AL	Collect WQP samples.	Collect quarterly WQP samples from the entry point tap (with the well pump running) and required number samples from identified drinking water locations in the distribution system. These are not first-draw samples. Continue quarterly until both ALs are met.	Rule 604f(3)(c)(i) (C)(iii)
Recommended as soon as possible No later than 6 months after end of monitoring period that exceeded AL	Collect one lead and copper sample from each entry point to the distribution system.	Collect sample from the entry point tap by the pressure tank (with the well pump running) These are not first-draw samples. Repeat the source water sampling every third year until both ALs are met for the whole 3-year period.	710c(1)
Recommended as soon as possible No later than 6 months after end of the monitoring period that exceeded AL	Submit a written proposal for optimal corrosion control treatment or a corrosion control study, including investigative study (sampling every potential drinking water location; replacing any fixtures that exceed the AL; and then sampling these new fixtures).	Contact the EGLE for guidance on corrosion control options. Corrosion control study and treatment installation may cease if both ALs are met during 2 consecutive 6-month monitoring periods as a result of an investigative study and material replacement.	604f(2)(e)(i)
this six month period or the next if already late in the period	Collect standard monitoring number samples from the distribution system and have them analyzed for lead and copper.	Notify LHD prior to compliance sampling. See “Lead and Copper Monitoring for Compliance” for details. Report the results to LHD and deliver the signed Consumer Notice of Lead Results using the notice provided by the EGLE.	604f(2)(c)
following six month period	Collect standard monitoring number samples from the distribution system and have them analyzed for lead and copper.	See “Lead and Copper Monitoring for Compliance” for details. Report the results to the EGLE and deliver the signed Consumer Notice of Lead Results using the notice provided by the EGLE.	604f(2)(c)

Tracking Form for Noncommunity Public Water Supply Lead or Copper Action Level Exceedance
(Grey shaded areas to be filled out by LHD)

Facility:	WSSN:
Contact person:	Phone:
Monitoring frequency: ☐ 3 Year ☐ Semi Annual ☐ Annual	
Date ALE calculated:	
Facility notified of ALE by letter on	
Date of Investigation	

Public Advisory required by **Date**

- ☐ Public Advisory sent by facility to consumers
- ☐ Public Advisory Certificate of Distribution sent to LHD
- ☐ Public Advisory Certificate of Distribution received by LHD
- ☐ Public Education sent by facility to consumers
- ☐ Public Education Certificate of Distribution sent to LHD
- ☐ Public Education Certificate of Distribution received by LHD

- ☐ Consumer Notification posted by facility
- ☐ Consumer Notification Certificate of Distribution sent to EGLE

Develop proposal for corrosion control treatment or investigative study.

- ☐ Written proposal sent to LHD by **Date**
- ☐ Written proposal received by LHD

- ☐ Water Quality Parameters collected by **Date**. Quarterly for length of ALE

Collect WQP at **entry point** and **exact distribution site**

- ☐ Water Quality Parameters results sent to LHD
- ☐ Water Quality Parameters received by LHD

- ☐ Source water samples collected by **Date**
- ☐ Source water results sent to LHD
- ☐ Source water results received by LHD

- ☐ Resume routine monitoring at 6 month intervals on **Date**. New schedule in SDWIS
- ☐ Develop new sample siting plan. Enter into SDWIS
- ☐ SDWIS coding complete

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: August 4, 2003	Subject: Lead and Copper Rule Implementation		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
Revised Date:	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
Reformatted Date: January 17, 2013	Number: ODWMA-399-027	Page: 1 of 9	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

The Lead and Copper Rule (LCR) of the National Primary Drinking Water Regulations was promulgated by the United States Environmental Protection Agency (U.S. EPA) under the federal Safe Drinking Water Act. The complexity of the rule necessitates guidance to maintain consistent implementation of the rule by field staff. Field staff include the Department of Environmental Quality (DEQ) public water supply (PWS) staff and local health department (LHD) staff. The LHDs oversee the Nontransient Noncommunity Water Supplies (NTNCWS) under authority delegated by the DEQ.

This policy replaces Water Division Policy and Procedure WD-03-019, Lead and Copper Rule Implementation, dated August 4, 2003.

AUTHORITY:

The following are the administrative rules promulgated under the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), related to the LCR (R 325.10101 *et seq.*):

- Rule 410 – Public Education and Consumer Notice of Lead Result
- Rule 604f – Corrosion Control Treatment, Source Water Treatment, and Lead Service Line Replacement
- Rules 710a, 710b and 710c – Monitoring
- Rule 710d – Reporting
- Rule 734 – Reporting of Results of Analyses
- Rule 1506 – Retention of Records

**OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
POLICY AND PROCEDURE**

Number: ODWMA-399-027

Subject: Lead and Copper Rule Implementation

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LIST OF ACRONYMS:

Act 399	Safe Drinking Water Act, 1976 PA 399, as amended
AL	Action Level
CCT	Corrosion control treatment
CDS	Combined distribution system
CDW	Community Drinking Water
CS	Consecutive Systems
CWS	Community Water Supply
LCR	Lead and Copper Rule
LHD	Local Health Department
MCS	Modified Consecutive System
mg/L	milligrams per liter
NPDWS	Noncommunity and Private Drinking Water Supplies
NTNCWS	Nontransient Noncommunity Water Supplies
OWQP	Optimal water quality parameters
PE	Public Education
POU or POE	Point of use or point of entry device
PWS	Public water supply
Rule 410	R 325.10410 and similarly throughout
WQP	Water quality parameters

DEFINITIONS:

“Improper sample” – a sample that does not meet all three of the following conditions as required in Rule 710a(2)(b):

- Sample that is one liter in volume.
- Sample that is first draw after the water has sat motionless in the plumbing for not less than six hours. Non-first draw samples may be allowed in facilities such as a prison or a hospital under Rule 710a(2)(e).
- Sample from either a:
 - Residential site cold water kitchen tap or bathroom sink tap, or
 - Nonresidential site interior tap typically used for consumption.

“Invalid sample” – a sample that meets one or more of the following conditions under Rule 710a(6):

- The laboratory establishes that improper sample analysis caused erroneous results.
- The sample container was damaged in transit.
- There is substantial reason to believe that the sample was subject to tampering.
- Field staff determine that the sample was taken from a site that did not meet sample site criteria as listed in Rule 710a(1)(c) to (e) and (h) for CWS and listed in Rule 710a(1)(f) to (h) for NTNCWS.

“Optimal water quality parameters (OWQP)” – the water quality parameters with limits, values, and dosages set by field staff under Rule 604f(3)(f) that represent optimal corrosion control treatment (CCT).

**OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
POLICY AND PROCEDURE**

Number: ODWMA-399-027

Subject: Lead and Copper Rule Implementation

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“Reduced number of sites” – the number of distribution system sites sampled for either:

- Lead and copper under the reduced monitoring column in the table in Rule 710a(3)(a) or
- WQP in Rule 710b(7)(a).

“Small, medium, or large water supply” – a water supply serving 3,300 or fewer people (small), greater than 3,300 and fewer than 50,001 people (medium), or more than 50,000 people (large), respectively.

“Standard number of sites” – the number of distribution system sites sampled for either:

- Lead and copper under the standard monitoring column in the table in Rule 710a(3) or
- WQP in Rule 710b(3)(a).

“Water quality parameters (WQP)” – parameters that are monitored for at the entry points to the distribution system and in the distribution system during the initial monitoring periods prior to CCT, during the follow-up monitoring period after CCT is installed, and during each six month monitoring period after field staff designate optimal CCT.

POLICY:

1. Summary of Rule Requirements

Corrosion causes lead and copper to leach from pipes in the distribution system. The LCR requires water supplies to optimize CCT to minimize consumers' exposure to lead and copper in drinking water.

Water supplies select and monitor distribution system sites that are most at risk of corrosion. Field staff may consider the small or medium water supply as having optimized CCT if results do not exceed the action level (AL) for lead of 0.015 milligram per liter (mg/L) and copper of 1.3 mg/L in 90 percent of sites tested during two consecutive six-month monitoring periods. Small and medium supplies that cannot demonstrate optimal CCT in two consecutive six month monitoring periods must commence CCT steps. All large water supplies must complete CCT steps, regardless of lead and copper levels. A water supply notifies consumers of the lead levels found at the site that was tested. Any supply that exceeds the lead AL must provide public education (PE) materials.

Source water treatment or lead service line replacement may be required when an AL continues to exceed after installing CCT. This policy does not discuss source water treatment or lead service line replacement.

2. Site Selection

a. Summary of Rule Requirements:

Water supplies select distribution sites that are most at risk of corrosion and categorize each site as Tier 1, 2, 3 based on risk. If insufficient Tier 1, 2, or 3 sites are available, the sampling pool is completed with representative sites with plumbing materials

OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
POLICY AND PROCEDURE

Number: ODWMA-399-027

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commonly found at other sites in the distribution system. As a site becomes unavailable, the site may be replaced provided the new site is selected based on Tier 1, 2, and 3 priorities. A replaced site should be explained when reporting on lead and copper monitoring.

b. Selecting Tier 1 Sites Based on Year Built:

Tier 1 sites are single family structures with:

- i. lead piping, or
- ii. lead service lines, or
- iii. copper piping and lead solder built after 1982 as per rule. It is believed that the corrosion may have stabilized in pipes of older structures built in 1982 or before, while newer pipes may continue to leach lead and copper for some time. However, due to a lead ban in 1987, structures built in 1987 or later were considered lead free. Therefore, Tier 1 sites with copper piping and lead solder are structures built after 1982 and before 1987.

c. Softeners and Other Point of Use (POU) and Point of Entry (POE) Devices:

Sampling sites with faucets that have POU or POE treatment devices, such as softeners, shall not be used as Tier 1, 2, or 3 sites unless insufficient Tiered sites are available. Field staff shall encourage water supplies to sample from a kitchen or bathroom tap that is not normally connected to the softener. If a sample of softened water is analyzed, then the water supply may consider returning to the same site to collect a sample of unsoftened water. Some residents may be able to bypass the softener at the tap. Both sample results (softened and unsoftened) will be used to calculate the 90th percentile. Sample results shall not be deemed improper on the basis that the water passed through a softener.

d. Supplies that bottle water:

An NCWS that is a water bottling plant and has fewer than 25 employees is classified as an NTNCWS, but all sampling under Act 399 is conducted at the raw water tap. All other sampling of the plant distribution system or bottling and packaging facility is done under the authority of the Michigan Department of Agriculture and Rural Development under Section 17 of Act 399, MCL 325.1017.

3. Monitoring Requirements

a. Summary of Rule Requirements:

The required number of distribution system sites is based on the population served. A water supply may sample more than the required number in a monitoring period. Supplies with fewer than five taps, must sample 100 percent of taps typically used for human consumption.

b. Monitoring Period:

Annual and triennial monitoring is conducted during the months June through September unless an alternate four-month period is designated.

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c. Insufficient Number of Samples Collected:

When fewer than the required number of samples are collected, field staff issue a monitoring and reporting (M/R) violation and calculate the 90th percentile based on available data. To return to compliance with monitoring requirements, field staff should direct the water supply to monitor again in the next available monitoring period – next six-month period, for those supplies on a six-month frequency, or next calendar year, for those supplies on reduced monitoring. Establish the next due date based on the return to compliance date and the previously assigned frequency.

d. Improper Sample:

Samples deemed improper are not used to calculate the 90th percentile. A water supply may deem a sample improper by not submitting the sample to the lab for analysis. Once a sample is analyzed, only the field staff may deem a sample improper with approval from the:

- i. Community Drinking Water (CDW) Unit Chief and notification of the Field Operations Section Chief, for CWSs, or
- ii. Noncommunity and Private Drinking Water Supplies (NPDWS) Unit Chief approval and notification of Environmental Health Section Chief for NTNCWS.

To deem a sample improper, field staff investigates all samples collected in the monitoring period and analyzed. The investigation includes a review of documents that demonstrate compliance with monitoring and testing requirements (for example, the Instruction Sheets that are completed by the resident). Extended stagnation is not a sufficient reason to deem a sample improper. Encourage water supplies to select sites that are in regular use. The supply may collect a replacement sample for a sample deemed improper provided the monitoring period has not ended.

e. Reduce Monitoring for Only One Contaminant:

Monitoring cannot be reduced for only one contaminant. The monitoring frequency is the same for both lead and copper, except under partial waiver provisions. To date, field staff have not granted full or partial waivers under Rule 710a(7).

f. Reduced Monitoring When Copper Exceeds AL:

Reduced monitoring is allowed in the rule when the copper 90th percentile exceeds the AL, provided the lead 90th percentile meets the AL after optimizing CCT under Rule 710a(4)(d)(ii) and (iii). However, the DEQ believes that a supply with a copper AL exceedence should remain on a six-month frequency for both lead and copper and will not reduce the monitoring frequency when an action level is exceeded.

4. Calculate Compliance

a. Summary of Rule Requirements:

Steps to calculate the 90th percentile are listed in Rule 604f(1)(c). When fewer than the required number of sample results is available, the 90th percentile is calculated based on the available data. When five samples are collected, the 90th percentile is the average of the highest and second highest concentrations. When fewer than five

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samples are collected, the sample result with the highest concentration is the 90th percentile.

- b. All Samples Analyzed Are Used to Calculate 90th Percentile:
All samples collected and analyzed within the monitoring period are used to calculate 90th percentile. However, samples deemed improper or invalid, even if analyzed, are not used to calculate the 90th percentile.
- c. Samples Collected Outside Monitoring Period
Samples taken outside the monitoring period are not used to calculate compliance. However, one exception exists – when a sample is deemed invalid and the supply has too few samples to meet the minimum requirements, the supply collects a replacement sample not later than 20 days after the date the sample was invalidated or by the end of the monitoring period, whichever occurs later, as allowed in Rule 710a(6)(d).
- d. Multiple Samples From Same Site:
Multiple samples collected from the same site during the monitoring period are all used to calculate the 90th percentile (do not average the multiple results). Samples collected outside the monitoring period are not included in the 90th percentile.

5. Corrosion Control

- a. Equivalent Corrosion Control Steps:
At this writing, CWS have used CCT steps as per rule rather than equivalent activities. Under Rule 604f(2)(b)(ii), a water supply may be considered by field staff to have optimized CCT if the supply demonstrates to the satisfaction of field staff that it has conducted activities equivalent to the CCT steps applicable to the water supply under Rule 604f(3). This determination is on a case-by-case basis after field staff have consulted with the water treatment specialist for CWS or the NPDWS Unit Chief and staff for NTNCWS. Field staff provide the supply with written notice explaining the basis for its decision and specifies entry point OWQPs.
- b. Modification of DEQ Treatment Decisions:
Under Rule 604f(3)(h), the DEQ may modify its optimal CCT determination based on its own initiative or in response to a supply's proposal to modify existing treatment or OWQPs under Rule 604f(3)(g). Each revised determination is made in writing, sets forth the new treatment requirements, explains the basis for the decision, and provides an implementation schedule for completing the treatment modifications.
- c. Change in Treatment or Addition of a New Source:
Water supplies are required to notify field staff of an upcoming long-term change in treatment or the addition of a new source under Rule 604f(2)(b)(iii)(C), Rule 710a(4)(d)(vii), and Rule 710a(7)(d)(iii). Field staff may require the water supply to conduct additional monitoring or take other actions to ensure that CCT remains optimized. If the water quality and characteristics of the new source are similar to the

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supply's existing sources, then field staff may consider the new source as not adversely affecting the supply's CCT and no further action is needed.

6. Consecutive Systems (CS)

Systems must monitor as per rule based on their population. On a case-by-case basis, the DEQ may consider the entire combined distribution system of consecutive systems when establishing monitoring requirements.

- a. **Consecutive System Approach:**
Some CS own their distribution system, but essentially have no water department. These CS purchase water retail and rely fully on the seller to provide all services including monitoring, operation, and maintenance of the distribution system. The combined distribution system (CDS) is considered one system for the purpose of complying with this rule.
- b. **Modified Consecutive System (MCS) Approach:**
Some CS own and operate their distribution system. These CS purchase water wholesale and may rely on the seller to provide certain services through a variety of arrangements and agreements. The entire CDS is treated as one system for the purpose of determining the total number of lead and copper distribution system sites and WQP distribution system sites.

The U.S. EPA allows states to propose Modified Consecutive System (MCS) monitoring protocols for these large combined distribution systems (CDS) subject to U.S. EPA approval on a case-by-case basis. Field staff should work through Lansing central staff when proposing an MCS for a particular group of supplies to ensure consistent implementation among districts and with the U.S. EPA.

- c. **MCS General Requirements:**
 - 1. The entire combined distribution system (CDS) is treated as one system for the purpose of determining the number of lead and copper tap samples. The total CDS reduced number of sites must be greater than or equal to the reduced number of sites for an individual system of equal size under Rule 710a(3).
 - 2. The number of lead and copper distribution system sites required in each consecutive system (CS) is based on percent of population of the CDS. Each CS collects no fewer than five samples.
 - 3. Each CS demonstrates compliance with sample site selection, lead and copper ALs, and monitoring requirements in the distribution system. In some wholesaler/CS arrangements, the wholesale system may agree to coordinate the collection of the samples, but the CS is responsible to comply.
 - 4. A CS may reduce the number of sites to no fewer than the reduced number for an individual system of equal size under Rule 710a(3). In most cases a CS is not eligible to reduce the number of sites, even if the CDS is able to reduce. The MCS number of sites is usually already lower than the reduced number for an individual system of equal size.

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5. A CS that exceeds an AL returns to standard number of sites for a system of equal size until both ALs are met in two consecutive six-month monitoring periods. Reduced monitoring may apply, including accelerated reduced frequency under Rule 710a(4)(d)(v). The CS may resume MCS monitoring under the CDS protocol when the CS frequency matches that of the CDS (for example, the CS may rejoin the CDS that samples triennially, when the CS qualifies for triennial monitoring).
6. The MCS approach also extends to WQP because the purpose is to look at the entire CDS.
 - (a) The numbers of distribution system sites are based on the population of the CDS. However, no minimum number of distribution system sites is required in any single CS in the CDS, provided the entire CDS meets the number of sites required. Selection of WQP distribution system sites should represent the entire CDS.
 - (b) A CS that exceeds an AL must also monitor the following, if not already doing so:
 - WQP distribution system monitoring: A CS that is already monitoring for WQP in the distribution system at a reduced number of sites is not required to increase to standard number of sites unless the CDS is required to do so. However, if a CS is NOT already monitoring WQP in the distribution system and they exceed an AL, the CS must monitor WQP at the standard number of sites until both ALs are met in the most recent round of sampling.
 - Entry point monitoring: WQP and entry point lead and copper samples must be collected at each entry point that serves the CS (that is, the entry point at the treatment plant, not at the consecutive connection). In order for the wholesale supply (treating/selling supply) to perform this monitoring, the CS must inform the wholesale supply that the CS exceeded an AL.
 - Medium or small CDS monitor WQP only in monitoring periods that exceeded an AL. All large CDS monitor WQP, regardless of lead and copper levels.
 - Failure to maintain OWQP at the entry points (for all large supplies and for small and medium-sized supplies that exceed an AL after installing CCT) are excursions as outlined in Rule 604f(3)(f). An excursion is a treatment technique violation.
7. A CS that exceeds the lead AL is responsible to issue PE and to replace lead service lines as per rule.
8. The wholesale supply complies with requirements associated with CCT.

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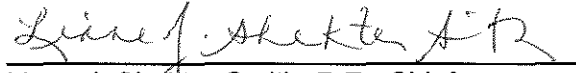
PROCEDURES:

WHO	DOES WHAT
Field staff, except as listed below	Make determinations and recommend actions requiring supervisor approval.
CDW Unit Chief for CWS or NPDWS Unit Chief for NTNCWS	Review and approve field staff's designation of improper sample.
Water treatment specialist for CWS or NPDWS Unit Chief and staff for NTNCWS	Consult with field staff as field staff determine on a case-by-case basis whether a water supply has optimized CCT using equivalent CCT steps.
CWS field staff	Work with CDW Unit staff when proposing an MCS monitoring protocol.
CDW Unit staff	Coordinate with U.S. EPA to receive approval on a case-by-case basis for MCS monitoring protocol.

REFERENCES:

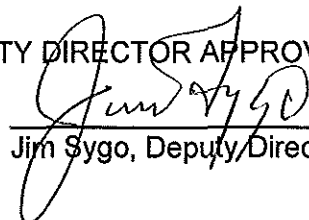
See Authority section of this policy.

OFFICE CHIEF APPROVAL:


Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

1/14/2013
Date

DEPUTY DIRECTOR APPROVAL:


Jim Sygo, Deputy Director

1/17/2013
Date

EXAMPLE LETTER

LHD: Remove or add information as needed.

*Example Reminder Letter for **Reduced** Frequency Lead and Copper Sampling*

RE: Lead and Copper Sampling at Nontransient Noncommunity Public Water Systems

System Name: WSSN:

Dear :

This letter is regarding the routine lead and copper water sampling requirement for System Name. The Michigan Safe Drinking Water Act, PA 399 of 1976 requires Noncommunity Public Water Supply systems to sample on a routine basis for lead and copper in drinking water.

Systems on reduced monitoring (annual or every 3 years) must sample during the period of June 1 through September 30. For school systems, samples should be collected while school is still in session, not during the summer break.

We have identified several items to remember when preparing to collect lead and copper samples this year.

- One (1) liter wide-mouth bottles must be used for lead and copper compliance sampling. Water samples may be taken to any laboratory certified for testing lead and copper in drinking water. If using the State of Michigan Drinking Water Laboratory, e-mail EGLE-RRD-DW-Bottles@michigan.gov to order bottles (unit 36CC).
- Samples shall be collected first-draw with a flow rate similar to the rate used under normal use (as in filling a glass of water). Procedures shall not include a “pre-stagnation flush” but must involve a minimum six-hour stagnation period prior to first-draw sampling.
- Sample according to the system’s designated sample siting plan available from the local health department. Sample sites should include fixtures commonly used for potable use, i.e. kitchen sink, drinking fountain. If you have questions about your sample siting plan, please contact Name and/or phone number before collecting samples. If the sample locations have changed from previous sample events, submit documentation with the results explaining the change (e.g. fixture has been replaced or removed).
- Report all results to this department as soon as possible. The Lead and Copper Report Form is included with this mailing and should accompany the laboratory reports when submitted to the department.
- Following your lead and copper monitoring, you will receive information regarding Lead and Copper Consumer Notification from EGLE. This notification is required at all Noncommunity Water Supplies that test for lead and copper.
- If an individual tap tests over 0.015 mg/l lead or 1.3 mg/l copper, System Name will be directed by the local health department to post as “do not drink” and follow up with a plumbing assessment. Schools with taps that test over 0.005 mg/l lead will be encouraged to conduct plumbing replacement.

In a water system with a 90th percentile Action Level Exceedance (ALE), this department will review the complexities of the entire water supply and determine whether the system should provide bottled water throughout the facility or if certain fixtures can be identified as available for drinking. In 2025, the Lead Action Level will be lowered from 0.015 mg/L to 0.012 mg/L.

Additionally, EGLE will be providing the Department of Health and Human Services (DHHS) with all lead monitoring results above 15 mg/l and will inform them of ALEs. This may result in additional public education, health screenings, testing of human blood lead levels, and/or other recommendations for action.

Enclosures: Lead and Copper Report Form
Sample Siting Plan for Individual WSSN

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Reduced Monitoring for Lead and Copper at Water Supply, WSSN WSSN

Dear _____ :

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and rules as amended, the water sampling requirements for Water Supply have been reduced.

Specifically, your monitoring requirement for lead and copper is being reduced from _____ to _____. Your next samples must be collected between _____ and _____.

The water sampling schedule for Water Supply accompanies this letter.

The LHD thanks Water Supply for your history of compliance with the Safe Drinking Water Act. Please direct any questions you may have on this matter to _____.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Change in the four (4) Month Lead and Copper Monitoring Period for System Name
WSSN

Dear _____ :

The Michigan Safe Drinking Water Act, PA 399 of 1976 requires Public Water Supplies to sample on a routine basis for lead and copper in drinking water. Normally systems on reduced monitoring (annual or every 3 years) must sample during the period of June 1 through September 30. However, per Rule 710a (4), (A), the department has the discretion to approve a different period to conduct the lead and copper sampling. The period shall be not longer than four (4) consecutive months and shall represent a time of normal operation where the highest levels of lead are most likely to occur.

At nontransient noncommunity water supplies that do not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the department shall designate a period that represents a time of normal operation for the water supply.

This letter is to inform you that under the provisions of the Safe Drinking Water Act, Act 399 P.A. 1976 and rules as amended, the 4 month monitoring period previously established for the collection of lead and copper samples at System Name has been changed to between beginning month and ending month.

The water sampling schedule for System Name accompanies this letter.

If you have questions regarding the monitoring requirements, please contact this office at _____ .

Sincerely,

Enclosures

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Sample Exceedance for Lead in Water Supply Serving System Name, WSSN: WSSN

Dear _____ :

System Name water sample results have not triggered an Action Level Exceedance (ALE). ALEs are those where the calculated 90th percentile of the lead analyses exceeds 0.015 milligrams per liter (mg/l).

On date, System Name sampled the drinking water for lead and copper. While the 90th percentile value did not result in an ALE, the result from one or more sample location(s) was elevated. The sample labeled "sample location" resulted in a lead level of _____ mg/l or _____ part per billion (ppb).

Elevated lead levels in drinking water are a threat to the health of people consuming water; even one location exceeding 15 ppb is cause for concern. The U.S. Environmental Protection Agency set a Maximum Contaminant Level Goal (MCLG) of zero for lead in drinking water. In other words, there is no known safe level of lead exposure.

LHD strongly recommends the following actions:

1. Post sample location as "do not drink" or remove it from service until corrective action(s) can be completed.
2. Do NOT collect additional samples until a plan of action has been discussed with the LHD.
3. Replace sample location and all connecting plumbing that can be accessed, with new, *lead-free** products. Chrome-plated brass bubblers and faucets, brass fittings and valves, and lead soldered fittings have been shown to contribute to high lead results.
4. Collect consecutive small volume samples on the replaced fixture to confirm a reduction in lead levels.
5. Visit www.michigan.gov/drinkingwater for information on Lead and Copper in drinking water.

The Safe Drinking Water Act requires that only *lead-free*¹ plumbing, solder, fittings, and fixtures be installed in public or residential water systems; this requirement took effect in Michigan in 1988.

Further assistance is available from LHD to aid in evaluating potential sources of lead and copper in the water system.

¹As of December 2014, Lead-Free is defined as not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Sample Exceedance for Copper in Water Supply Serving System Name WSSN: WSSN

Dear :

This letter is regarding the water supply for System Name. System Name has not triggered an Action Level Exceedance (ALE). ALEs are those where the 90th percentiles of the copper analyses exceed 1.3 milligrams per liter (mg/l).

On date your water supply was sampled for lead and copper. The result from one or more sample location(s) exceeded the Action Level for copper. The sample labeled "sample location" resulted in a copper level of mg/l.

Elevated copper levels in drinking water are a threat to the health of your water consumers; even one location exceeding 1.3 mg/l is a cause for concern.

LHD strongly recommends the following actions:

1. Post sample location as "do not drink" until corrective action(s) can be completed.
2. Retest this sample location following standard sampling procedures. If the sample location result is over the Action Level, the sample location plumbing should be investigated by a licensed plumber to identify the best solution.

Further assistance is available from the LHD to aid in evaluating potential sources of lead and copper in the water system.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Water Quality Parameter Monitoring and Reporting Violation Notice
Water Supply Name WSSN

Dear Facility Owner:

LHD records show that you are in violation of the *Safe Drinking Water Act 1976 PA 399*, as amended (Act 399), R 325.10710b.

These rules state that water supplies that exceed the lead or copper action level shall monitor for water quality parameters (WQP). The monitoring requires that water samples be analyzed at a certified lab. Once received, the results must be reported to this department. Your specific monitoring requirements were outlined in a letter sent to you on date. Our records show that you did not collect all of the required WQP samples by due date. If you did collect the required samples and have a copy of the lab results, contact this office as soon as possible at phone or email.

This violation began on date and will continue until you have returned to compliance. To return to compliance, you must collect Number of Sets of WQP samples. A WQP set consists of analyses for pH, alkalinity, calcium, conductivity, water temperature, and orthophosphate if a phosphate inhibitor is used. These are *not first draw* samples. Submit the report of analyses to this office by date.

Rule 325.10404 requires that suppliers provide public notice to notify users of the failure to collect required samples. The monitoring violation public notice is enclosed. Posting of the public notice shall continue for as long as the violation exists. The notice shall remain in place for not less than 7 days, even if the violation is resolved. Please notify your consumers by date. Send us a signed and dated copy of the notice that was issued within 10 days of posting the public notice.

LHD: Discuss the assessment of civil fines if applicable, delete if not applicable

Remember to include your water supply serial number (WSSN) when submitting samples. If you choose to use a private laboratory instead of the State laboratory, you must inform this office of the results.

We appreciate your cooperation in resolving this matter. If you have any questions regarding this letter, please contact this office phone or email at your earliest convenience.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Disinfection Byproduct Sampling System Name WSSN:

Dear _____ :

Our records indicate that System Name is adding a chemical disinfectant (chlorine) to the drinking water at your public water supply. In addition to monthly tracking and reporting, there are additional sampling requirements to measure the levels of byproducts that can be formed when a chemical disinfectant is added to drinking water.

System Name is required to sample for disinfection byproducts every 3 years. These samples are to be collected prior to date at Describe location.

Total Trihalomethanes (TTHM)

- The trihalomethane compounds
- Trichloromethane (chloroform)
- Dibromochloromethane
- Bromodichloromethane
- Tribromomethane (bromoform)

Haloacetic Acids (five) (HAA5)

- monochloroacetic acid
- dichloroacetic acid
- trichloroacetic acid
- monobromoacetic acid
- dibromoacetic acid

Disinfection byproduct samples need to be at or below a specific temperature when received at the lab.

- Samples that do not meet the temperature requirement cannot be accepted for compliance purposes.
- Samples received within 24 hours after collection will be accepted if they are packed in ice.
- Samples not on ice will not be accepted for compliance.

If you see a comment on your sample result indicating temperature requirements were not met, a new sample should be collected as soon as possible to avoid a monitoring violation.

If you have any questions on sample collection or location please contact this office at _____ .

cc: Certified Operator

Disinfection Byproduct Sampling

Nontransient Noncommunity Water Systems Injecting Chlorine or Chloramines

Who has to Sample:

Nontransient Noncommunity systems adding chlorine (liquid or gas) or chloramines to the public water supply must sample for disinfection byproducts including both Total Trihalomethanes (TTHM) and Haloacetic acids (HAA5).

When to Sample:

The routine sampling frequency is annually in the month of **August**. Annual sampling may be reduced to once every three years if one year's both results are below $\frac{1}{4}$ of the maximum contamination level (MCL) or two years results are all below $\frac{1}{2}$ the MCL. Water supplies on once every three year sampling may stay on that reduced frequency if results are less than $\frac{3}{4}$ of the MCL. Quarterly sampling is required if any results exceed the MCL. Water supplies that are required to sample will be notified before the samples are required.

Where to Sample:

Sample from the tap representing the maximum residence time in the distribution system. Typically, this would be an active tap farthest from the well. Indicate this sample point by name or location on the lab sample slip. Example: Break Room Bldg 3.

Ordering Sample Units*

Contaminant	Unit	Test Code	Cost
TTHM	36VO (has 2 vials)	CXTM	\$ 65.00
HAA5	36HA	CXHA	\$130.00

Disinfection Byproduct Maximum Contaminant Level (MCL)

Total Trihalomethanes (TTHM) 0.080 mg/l

Haloacetic acids (five) (HAA5) 0.060 mg/l

Notes:

Free chlorine residual of the treated water must be measured and recorded at the same time and location the total coliform samples are collected. Record the free chlorine residual on the monthly operation report (MOR). The maximum free chlorine residual level allowed in treated water is 4.0 mg/l as chlorine.

Before you collect samples, be sure to read sampling instructions with the sample unit. When you submit samples to the laboratory include: Water Supply Serial Number (WSSN), Facility Name, Date of Sample, and Sampling Point Name/Location.

If you have questions, please contact your local health department or visit www.michigan.gov/deqnoncommunitywatersupply

* Information listed pertains to the DEQ Drinking Water Laboratory services only and costs are subject to change. Sample unit order forms are enclosed. You may use any laboratory certified by DEQ for these drinking water analyses.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Disinfection Byproducts Maximum Contaminant Level Exceedance
System Name, WSSN

Dear _____ :

This letter follows up on the disinfection byproduct (DBP) sampling of System Name which included Total Trihalomethanes (TTHM) and Haloacetic Acids Five (HAA5) samples.

The DBP sampling conducted by System Name on date had a TTHM result of concentration milligrams per liter (mg/l) and a HAA5 result of concentration mg/l.

This result is above/below the maximum contaminant level (MCL) for TTHM of 0.080 mg/l and above/below the MCL for HAA5 of 0.060 mg/l.

The elevated sample result triggers an increase in monitoring frequency to quarterly under Rule 610b(2)(a) of the Safe Drinking Water Act, 1976, PA 399, as amended (SDWA).

System Name is required to sample for TTHM and HAA5 quarterly starting with the Month to Month Year quarter. System Name is currently in compliance with the DBP requirements. A running annual average will be calculated once all new quarterly samples have been received. If the running annual average of quarterly samples exceeds either DBP MCL after 4 quarters of sampling, the water supply will be in violation of the DBP MCL and will have to propose a remedy to maintain compliance.

If you have questions regarding this requirement, please contact me at _____ .

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: January 1, 1989	Subject: Response Procedures for Volatile and Synthetic Organic Chemical Contamination		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
Revised Date:	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
Reformatted Date: January 7, 2013	Number: ODWMA-399-015	Page: 1 of 6	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

The presence of volatile organic chemicals (VOCs) or synthetic organic chemicals (SOCs) in drinking water is generally considered an indication of water supply contamination. VOCs or SOCs in a water supply may represent a potential health concern and can indicate that the source water is vulnerable to contamination. VOC and SOC contaminants have been identified in all types of water supplies in Michigan, including community water supplies (CWSs), noncommunity water supplies (NCWSs), and those serving single family residences. The VOCs and SOCs include compounds that have maximum contaminant levels (MCLs) established by the United States Environmental Protection Agency, those with proposed MCLs, and those for which there is very little available toxicology information. Some of the VOCs and SOCs are known or suspected human carcinogens.

A wide variety of circumstances may be involved in each case of potential chemical contamination, including toxicity and concentration of the compound identified, water supply construction, site conditions, and other factors. It is the goal of the Office of Drinking Water and Municipal Assistance (ODWMA) to ensure that Michigan residents and visitors have a continuously safe and adequate drinking water supply. Part of this goal is to locate and investigate cases of drinking water contamination. If contamination of a water supply is identified, efforts are initiated to protect the water supply from further contamination, monitor water quality, minimize exposure to users of the water supply, and alert the public.

This policy presents guidelines and standard procedures for ODWMA and local health department (LHD) staff responding to those situations where VOCs or SOCs have been identified. Because of the wide variety of circumstances, which will exist with each case, staff judgment and discretion will play a significant role in using these guidelines. The guidelines address practices to confirm contamination, identify precautionary measures to minimize exposure, and describe appropriate corrective actions. The best precautionary measure when VOCs or SOCs are confirmed present is source replacement as the presence of VOCs and SOCs not only represent a potential health concern, their presence also indicates that the source is vulnerable.

**OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
POLICY AND PROCEDURE**

Number: ODWMA-399-015

Subject: Response Procedures for Volatile and Synthetic
Organic Chemical Contamination

Page 2 of 6

AUTHORITY:

The Michigan Safe Drinking Water Act, 1976 PA 399, as amended and Administrative Rules (Act 399), Michigan Compiled Law 325.1015, Section 15, Protection of public health; notice to supplier of water; inspection of waterworks systems; order; public hearing; emergency order; action limiting water system expansion or water use.

STAKEHOLDER INVOLVEMENT:

This policy has been in effect since 1989 and has not been the subject of controversy.

POLICY:

Sample Collection

If a water supply has been sampled for VOC or SOC analysis, and the analysis shows the presence of VOCs or SOC, check samples must be collected to confirm the presence of the contaminant regardless if it is a regulated or unregulated contaminant. The following procedures should be followed when collecting check samples:

1. The check sample must be collected from the same source and sampling tap used for the initial sample (as close to the water source as possible).
2. If multiple wells are present, it will be necessary to isolate each well for sampling purposes, and the check sample should be collected while the same well is operating as it was operating when the initial sample was collected.

If the check sample confirms the presence of a VOC or SOC, then an investigation into possible sources of the contamination must be initiated. If initial and check samples were taken from the point of entry to the CWS or NCWS and not from the source well, an additional sample from the source well will be needed as part of the contamination source investigation. If samples and investigations indicate the source of water such as the aquifer is contaminated, appropriate precautionary measures should be initiated. If contamination is from a location other than the water source, corrective actions and precautionary measures must be initiated. Examples of potential sources of contamination include cross connections, pipe permeation, airborne, or residuals from new construction or water supply repairs.

If the check sample does not detect the presence of a VOC or SOC, it should not be assumed that the original sample was in error and that chemical contaminants do not exist in the water supply. A second check sample should be collected. If VOCs and SOC are again not detected, then a CWS or NCWS can return to routine monitoring. If the samples are from a private residential water supply and contaminants are not detected in both check samples, no further action is necessary. If the second check sample does confirm the presence of a VOC or SOC, then response actions as detailed within this policy are required.

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Initial Response Actions

Normally, precautionary measures are not imposed until after a check sample confirms the presence of the VOC or SOC. Exceptions to this general rule include:

1. Physical Observation. For example, there is an odor, taste, or visual evidence indicating the presence of chemical contaminants in the water.
2. By Association. For example, adjacent wells have already been confirmed for the presence of chemical contaminants.
3. Cause and Effect. For example, a tank containing a particular contaminant located very close to the water source, ruptures and spills its contents on the ground surface, and the contaminant was detected in the initial sample.
4. Judgment/Discretion. Circumstances may dictate that precautionary measures be implemented even before an initial sample is collected.

If a regulated VOC or SOC contaminant is confirmed present in a CWS or NCWS at a concentration above an established MCL, then public notice, additional monitoring, and precautionary measures in accordance with Act 399 must be followed. Precautionary measures should include water source replacement or treatment to remove or reduce public exposure to the contaminants. If the regulated contaminants detected in a CWS or NCWS are at concentrations below established MCLs, then increased monitoring in accordance with Act 399, Rule 716 should be initiated.

If contaminants detected in a CWS or NCWS are unregulated compounds, an investigation into possible sources of the contaminants should be initiated. Further response actions may include elimination of the contaminant source if identified, replacement of the water source if deemed appropriate, or increased monitoring of the water supply.

If regulated or unregulated VOC or SOC contaminants are detected in a private residential water supply, then precautionary measures as detailed in this policy are recommended.

Precautionary Measures

Once the presence of VOCs or SOCs in the water supply has been confirmed, the appropriate precautionary measures should be initiated by the supplier of water, the DEQ, or the LHD as appropriate. The following precautionary measures are generally required, but are not mandatory for all cases of confirmed VOC or SOC contamination.

1. Notification. When a regulated contaminant is confirmed present at a concentration above an established MCL at a CWS or NCWS, notification of all customers is required. The notification must meet the content and delivery methods detailed in Act 399, Part 4 Public

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Notification Rules. Prompt notification is encouraged when a regulated contaminant is present at a concentration below the MCL or when an unregulated contaminant is confirmed present in a CWS or a NCWS, but at a minimum, shall be accomplished as required in the annual consumers' confidence or annual water quality report where applicable. Notification of analysis results and potential health effect issues shall be provided to private residential water supply users by a LHD or the DEQ when their water supplies are confirmed to contain VOCs or SOC.

2. Monitoring. A CWS or a NCWS with VOC or SOC contaminants confirmed present should be monitored on a quarterly basis until a permanent remedy is obtained or it is determined the contaminant concentrations are consistently and reliably below a level that is considered to pose an increased risk to public health. A private residential supply should be monitored on a quarterly basis except for cases where bottled water is being provided. The owner of the water supply is responsible for the collection and analysis of water samples. Analysis must be performed by a laboratory certified by the DEQ for VOC and SOC analysis work, and results must be reported to the DEQ.
3. Reduce Exposure. Reduce exposure to the contaminated water by limiting use of the contaminated source. Examples include:
 - a. Use other municipal water sources and discontinue using the contaminated source.
 - b. Use other uncontaminated wells at the site.
 - c. If multiple wells are used by the water supply and only one well is contaminated, place the contaminated well in the last position of use.
 - d. Install water treatment such as point-of-entry or point-of-use devices to remove or reduce the presence of VOCs and SOCs. If a CWS or NCWS has contaminant concentrations below an established MCL, or the water supply contains an unregulated contaminant, we cannot require the use of treatment devices. However, the DEQ strongly recommends that the water from the well not be used for drinking purposes and suggests that the owner seek an alternative source or install approved treatment devices.
 - e. If the contaminated well is a private residential well, the DEQ and the LHD should encourage the owner to seek an alternate source of drinking water until a permanent remedy to resolve the contamination can be achieved.

Use of Contaminated Drinking Water

Public Water Supplies - VOC or SOC is below an MCL. If a contaminant concentration is below an established MCL, the DEQ cannot require a CWS or a NCWS to stop serving that water to their public. However, the DEQ will recommend the CWS or NCWS minimize use the well to the extent possible and encourage them to seek an alternate water source. Unless there are site-specific hydrogeologic conditions allowing a monitoring reduction, quarterly monitoring for the contaminants of concern should be required if there is continued use of the contaminated source.

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Public Water Supplies - VOC or SOC is above an MCL. If a contaminant concentration exceeds an established MCL, the CWS or NCWS must pursue a permanent remedy. Where at all possible, an approved source of water (hailed water, bottled water, temporary treatment of the contaminated water) shall be provided as a temporary measure while a permanent solution is pursued. Such temporary measures shall apply to Type III, NCWS, and small CWS systems. Where not practical, such as at larger CWS systems, the public notice must adequately address all concerns. Consideration of providing a temporary source even on large CWS systems must be given where acute health hazards exist or if a permanent solution is not readily available.

Single Family Residential Water Supplies. Advisories issued regarding single private residential wells are not enforceable by the DEQ or an LHD. Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and Administrative Rules provide for interim and permanent response measures such as bottled water, well replacement, connection to a CWS, treatment, and other corrective measures. The DEQ, an LHD, or others may monitor water quality in lieu of response measures where MCLs for public water supplies have not been exceeded in the private well. All users of a water supply containing compounds at concentrations exceeding an MCL will be advised against using the water.

Water quality monitoring by the DEQ or an LHD is dependent upon approved laboratory analytical capacity and staff availability. The DEQ may give consideration to interim monitoring of single family residential wells by responsible or potentially responsible parties in lieu of providing an alternate permanent water source. However, the final solution should either be a permanent water supply replacement or a hydrogeologic study conclusively demonstrating that the contamination concentration is diminishing or that certain wells will not be impacted by a contaminant plume.

Special Conditions. Under certain conditions, contaminant concentrations may be elevated high enough to warrant a no-body contact advisory. The DEQ will not issue no-body contact advisories, nor will it recommend that one be issued by an LHD without a thorough review, analysis, and recommendation by a Department of Community Health toxicologist.

Because of the volatile nature of some compounds dissipating with exposure to heat and the air, use of water with low levels of VOCs is generally acceptable for dish washing. This applies to both hand washing and machine washing. Staff discretion may be necessary if the concentrations of the VOCs are extremely high.

Water supplies contaminated with unacceptable concentrations of VOCs or SOCs should not be used for cooking. However, these sources may be acceptable for washing and rinsing food products where the contaminated water will not be part of the finished product.

Commercially prepared and packaged ice must be used if the on-site water is not approved for drinking. Use of any on-site ice-making equipment must be discontinued.

OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
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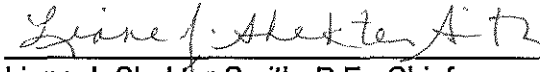
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Other special circumstances may arise that will require staff to use judgment/discretion in determining the health risk associated with contaminated water for those purposes.

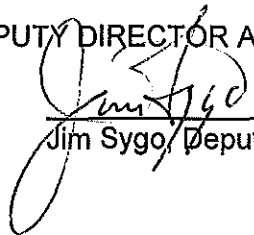
OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

12-28-2012
Date

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

1/7/2013
Date

EGLE Drinking Water Laboratory Holding Times for Drinking Water Analysis

Updated 6/28/2019

Metals: Samples must be acidified at the laboratory within 14 days of collection. This is required for the Lead/Copper Rule and recommended for all metals. After acidification, the holding time is 6 months except mercury, which is 28 days.

Inorganic

Chloride	28 days
Cyanide	14 days*
Conductivity	28 days
Fluoride	1 month
Nitrate	48 hours* (non-chlorinated) 14 days (chlorinated)
Nitrite	48 hours*
pH	immediately
o-phosphate	48 hours
Silica	28 days
Sulfate	28 days

Organic

Chlorinated Acid Herbicides (CXHB)	14 days*
Pesticides (CXPT)	14 days*
Per- and Polyfluoroalkyl (PFAS)	14 days*
Carbamates (CXLP)	28 days*
EDB and DBCP (CXEV)	14 days
Aromatic Compounds (CXPA)	7 days
Dalapon and Haloacetic acids (CXHA)	14 days*
Trihalomethanes (CXTM)	14 days*
Volatile Organics (CXVO)	14 days*
1,4 Dioxane (CXPD)	14 days
Methane, ethane, ethylene (CXMEE)	14 days

Microbiology

Water Coliforms (B)	30 hours
E. coli for LT2 (BLT2)	30 hours
Fecal Coliform (NPFC)	8 hours
E. coli (NPEC)	8 hours
Heterotrophic Plate Count (BSPC)	8 hours

*samples must be thermally preserved entire time to be used for compliance

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Temperature Requirements Not Met at System Name, WSSN: WSSN

Dear :

There are required water samples that need to be at or below a specific temperature of 6°C (42.8°F), but not below freezing or frozen, when received at a laboratory (lab). Samples that do not meet the temperature (thermal preservation) requirement cannot be accepted for compliance purposes.

On Date of Sample, a Analyte sample was collected at System Name and was reported as not meeting temperature requirements. As a result, this water sample result(s) will not count toward compliance with your monitoring requirements.

A new Analyte sample must be collected and submitted as soon as possible. To best assure temperature requirements are met, review the recommendations from the Michigan Department of Environment, Great Lakes, and Energy.

If you have any questions, please contact me at .

Water Sample Temperature Requirements

There are required water samples that, when received at the laboratory (lab), need to be at or below a specific temperature. Samples that do not meet the temperature requirement cannot be accepted for compliance purposes. Temperature limits apply to the following samples: nitrate, nitrite, volatile organic compounds (VOCs), synthetic organic compounds (SOCs), cyanide, per- and polyfluoroalkyl substances (PFAS) and disinfection byproducts (TTHM and HAA5).

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) recommends the steps below to help ensure your samples are accepted for compliance:

1. Collect samples early in the monitoring period. If resampling is needed, you may still have time before the due date to avoid a monitoring violation.
2. If your sample is rejected for being above the required temperature, resample as soon as possible. Keep an extra sample bottle on hand in case resampling is needed.
3. If you use EGLE lab, check the box at the top of the Sample Request Form that says, "Do NOT test sample(s) unless all requirements of the Safe Drinking Water Act are met." This will save you the cost of paying for a sample that does not count toward your monitoring requirements. Check with other labs regarding their procedures.
4. Freeze the ice packs for a minimum of 24 hours prior to sample collection.
5. Refrigerate samples for a minimum of one hour prior to mailing samples to the lab.
6. Use enough ice packs in the box to maintain the required sample temperature of 6°C (42.8°F), or below. Frozen samples cannot be accepted.
7. Check with the shipping vendor to insure they can deliver within 24 hours after collection.
8. If possible, deliver samples to the lab in person within 24 hours after collection. Samples received within 24 hours after collection will be accepted *if they are packed as described above*. Samples not on ice will not be accepted for compliance.
9. If samples are delivered to a lab in person, remove sample(s) from the cooler(s) and give them directly to personnel – do not leave them in a lobby. Request temperature readings while you are there so you know immediately if resampling is necessary.

If you see a comment on your sample result indicating temperature requirements were not met, a new sample should be collected as soon as possible to avoid a monitoring violation.

If you have any questions regarding sampling requirements at your drinking water supply, contact your local health department. For guidance on meeting temperature requirements, contact your drinking water lab.

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4. Freeze the ice packs for a minimum of 24 hours prior to sample collection.
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Chapter 7 Appendices

Public Notice and Public Education

<u>Documents</u>	<u>Number of Pages</u>
G01 Voluntary Total Coliform Bacteria PN.....	1
G01.1 Voluntary Total Coliform Bacteria PN (Spanish).....	1
G02 Generic Violation Notice Letter.....	1
G03 E-Coli MCL Violation PN	2
G05 Nitrate MCL Violation PN	1
G05.1 Nitrate MCL Violation PN (Spanish)	1
G07 Precautionary Measures for Pressure Loss PN.....	1
G08 Arsenic MCL Violation PN	1
G09 PFAS MCL PN	2
G10 Water Quality Monitoring Violation PN	1
G10.1 Water Quality Monitoring Violation PN (Spanish)	1
G11 Lead Public Education Requirements and Certificate of Distribution of Public Education.....	3
G11.1 Lead Consumer Notice	1
G11.2 Lead Public Advisory Notice and Certification	2
G12 Lead Exceedance Fixture Posting.....	1
G20 Failure to Conduct Level 1 Assessment PN	1
G21 Failure to Conduct Seasonal Start Up Procedures PN	1
G22 Failure to Take Corrective Action PN	1
G23 Failure to Take Corrective Action Following an E. coli Positive PN.....	1
G30 Failure to Obtain a Certified Operator (Untreated) PN.....	1
G31 Failure to Obtain a Certified Operator (Treated) PN	1
G32 Public Notification Violation Letter	1

Do not drink the water

We are voluntarily posting this notice to protect public health of our customers.

Do not use tap water for:

- Drinking
- Soup, Juice, Coffee
- Making Ice
- Brushing Teeth

For your safety, until the problem is corrected, bottled water is being provided.

Coliform bacteria were found in our water supply on

BOTTLED WATER IS BEING SUPPLIED FOR CONSUMPTION.

Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Bacterial contamination can occur when surface waters gains entry to the drinking water source, storage or distribution system (after construction, repairs, or damage to the well, tanks, or piping).

We are working with the local health department to resolve this problem as soon as possible.

For more information, please contact:

No beba el agua

Estamos publicando de forma voluntaria este aviso para proteger la salud pública de nuestros consumidores.

No use agua del grifo para:

- Beber
- Sopa, jugo, café
- Hacer hielo
- Cepillarse los dientes

Para su seguridad, hasta que se corrija el problema, se proporciona agua embotellada.

Se encontraron bacterias coliformes en nuestro suministro de agua en

SE PROPORCIONA AGUA EMBOTELLADA PARA EL CONSUMO.

Las bacterias coliformes se encuentran naturalmente en el ambiente y se utilizan como indicador de que puede haber otras bacterias potencialmente nocivas presentes. Se encontraron bacterias coliformes en más muestras de las permitidas y esto fue una advertencia de posibles problemas.

La contaminación bacteriana puede ocurrir cuando las aguas superficiales tienen acceso a la fuente, al almacenamiento o al sistema de distribución de agua potable (tras la construcción, las reparaciones, o daños al pozo, a los tanques o a las cañerías).

Estamos trabajando con el departamento de salud local para resolver este problema tan pronto como sea posible.

Para obtener más información, póngase en contacto con:

Example Violation Notice

LHD: Remove or add information as needed.

VIOLATION NOTICE

RE: Violation Notice (Notice) for Facility, WSSN

Dear _____ :

The LHD records show that Facility is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399).

Example

Specifically, Rule _____ requires that any chemicals that come in contact with water intended for use in a public water supply shall meet ANSI/NSF standard 60. The violation was identified during a routine treatment surveillance site visit conducted by _____ on date. Facility failed to use an ANSI/NSF 60 approved ferric chloride solution. The ferric chloride solution is used in conjunction with the existing arsenic removal treatment system.

To return to compliance, the Facility must halt the use of the unapproved chemicals immediately and obtain approved materials that meet the ANSE/NSF 60 standard no later than **date (14 days)**. Notify this department by date of the replacement chemicals name and certification documents. Failure to comply may result in escalated enforcement.

If you have any information that shows that the ferric chloride solution in use meets ANSI/NSF 60 standard, provide the specifications to this office immediately.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this notice, please contact me at email; phone; or at address.



Do Not Use Tap Water For:

Drinking
Soup, Juice, Coffee
Making Ice
Brushing teeth
Dishwashing

Use Special Precautions For:

Hand Washing
Bathing

For your safety, until the problem is corrected, safe water is provided as follows:

E. coli bacteria were found in the NAME OF SYSTEM water supply on DATE.

DO NOT DRINK THE WATER.

USE ALTERNATE SUPPLY OF WATER FOR CONSUMPTION AND OTHER USES AS NOTED

Potential Health Effects

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers. Use commercially prepared hand sanitizer/wipes for hand washing. Do not allow infants or young children to bathe or shower in contaminated water since they may ingest it.

What happened and what is being done

Bacterial contamination can occur when surface waters gains entry to the drinking water source, storage, or distribution system (after construction, repairs, or damage to the well, tanks or piping).

We are working with the local health department to resolve this problem. We anticipate resolving the problem within ESTIMATED TIME FRAME. For more information, please contact the facility representative below or the LHD Name. Please share this information with all other people who drink this water, especially those who may not have received this notice directly.

Supply Contact Name: _____

Address: _____

Phone Number: _____

PROOF OF DELIVERY

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

WSSN/PWSID:

Reminder to water supplier: A signed & dated copy of this notice must be sent to the Local Health Department.

Public Notification / Noncommunity Water Supplies

The Public Notice template provided is intended to be modified with the applicable information (system name, MCL date, correction date, contact person, etc.) prior to delivery. Also, reference to the uses of water, location of alternate water sources, or reference to bathing / showering etc., are to be modified on the template for the individual facility / situation. The duration of the notice is continuous through posting until compliance with the MCL is determined by the local health department. A system that is closed or taken out of service when the MCL is determined shall provide public notice for at least 2 weeks or until compliance is attained and shall not resume providing water to the public until the MCL violation has been resolved as determined by the local health department.

The Public Notice template on the reverse side should contain all applicable requirements summarized below when properly completed and posted.

The following is a summary of public notice requirements for owners of noncommunity systems. For specific requirements for public notification for coliform maximum contaminant level violations, please refer to Part 4 of the Safe Drinking Water Act 1976 PA 399, as amended.

Rule 401a (1): All MCL violations require public notice.

Rule 401a (4) Technically, owners have 10 days to certify to the department they provided the notice (ie. send a signed copy). However, since they are required to issue the notice within 24 hours (see below) it is not appropriate to wait 10 days to see if a notice is received to verify compliance. (See Coliform Follow up at Noncommunity Supplies.)

Rule 402 (1)(a)(g) E. coli or fecal coliform are Tier 1 notices. Under (g) Total coliform MCLs are also considered Tier 1 for noncommunity systems.

Rule 402 (2)(a) Public notice shall be provided as soon as practical but within 24 hours after the supplier learns of the violation.

Rule 402 (3) Suppliers shall provide the notice in a form and manner reasonably calculated to reach all persons served through 1 or more of the following forms of delivery:

- (a) broadcast media, radio television,
- (b) posting of the notice in conspicuous locations throughout the area served by the system,
- (c) hand delivery to persons served by the system,
- (d) another delivery method approved in writing by the department.

Conspicuous locations include where water can be consumed ie., bathroom, breakroom sink, kitchen, motel room, drinking fountain, and common area such as entry doors or cash register area where applicable.

Parents/guardians must be provided notice when consumers are children at schools and child care systems. (Refer to the complete text of Rule 402, especially 402 (2)(c)).

Rule 405 (1) Each public notice shall include all of the following:

- (a) a description of the violation including the contaminant,
- (b) when the violation occurred,
- (c) potential adverse health effects (required text is in italics on the posting under Potential Health Effects),
- (d) the population at risk,
- (e) if an alternate water supply should be used,
- (f) what actions consumers should take including when they should seek medical help,
- (g) what the supplier is doing to correct the problem,
- (h) when the problem is expected to be corrected,
- (i) the name, address, and phone number of the supplier to contact for additional information.

WATER UNSUITABLE FOR INFANTS

NITRATE STANDARD EXCEEDED

Water samples from this facility show that the nitrate drinking water standard has been exceeded with a result of RESULT mg/l as determined on DATE. Under the provisions of the Safe Drinking Water Act, 1976 PA 399 and Rules as amended, the EPA has set the Maximum Contaminant Level (MCL) for Nitrate at 10.0 mg/l (milligrams per liter).

BE ADVISED

Possible Health Effects

Infants below the age of six months who drink water containing nitrate in excess of the maximum contaminant level could become seriously ill and, if untreated may die. Symptoms include shortness of breath and blue baby syndrome.

Nitrates can often be associated with surface or near surface water contaminants such as fertilizers, septic systems and animal waste. Thus the presence of nitrate in significant concentrations in a drinking water well is a concern whether or not infants use the water. If you are pregnant or have specific health concerns, you may wish to consult your doctor.

Steps Being Taken

Do not give this water to infants. A supply of bottled water that meets drinking water standards is available for infants and those who request it. (Boiling the water only serves to concentrate nitrate, thereby increasing the hazard.)

The availability of a nitrate safe source of water is being evaluated by the management in cooperation with the Health Department. We anticipate resolving the problem within ESTIMATED TIME FRAME. For more information, please contact SUPPLY CONTACT NAME / PHONE / ADDRESS or the LHD Name. Please share this information with all other people who drink this water, especially those who may not have received this notice directly.

PROOF OF DELIVERY

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

WSSN/PWSID:

Title

Date Distributed

Reminder to water supplier: A signed & dated copy of this notice must be sent to the Local Health Department

No Tome Esta Agua

El nivel de nitrato esta alto

Bajo las provisiones de la Ley 399, P.A. de 1976, según enmendada, ley para el Agua Potable en Michigan. La EPA ha establecido un limite máximo de contaminantes (MCL) para el nitrato de 10.0 ppm (partículas por millón). Muestras de agua de esta facilidad han indicado que el MCL está alto.

AVISO

Esta agua no debe ser usada para tomar o para preparación de alimentos.

Las facilidades de agua que abastecen este lugar han sido examinadas y se encontró que contienen un nivel alto de nitrato según las normas para agua potable. Aunque el nitrato en agua potable no es de preocupación para mucha gente, esta agua no debe ser usada para darle a infantes menores de 6 meses (o para preparar formulas). Altos niveles de nitrato en agua son un riesgo para infantes. Poniéndolos en riesgo de contraer la enfermedad de "methemoglobinemia," que reduce eficiencia para conducir oxígeno en la corriente sanguínea. Esto puede traer un paro en las funciones normales del cuerpo. El hervir el agua solo concentrara el nitrato aun mas, por lo tanto aumentará los riesgos.

La presencia de nitrato en agua para tomar puede ser indicativo de otros problemas en el sistema de servicio de agua para tomar. El nitrato se asocia a menudo con el agua superficial. Como resultado, su presencia en el agua superficial, o a niveles altos, es un riesgo para la salud. El tomar agua que no exceda el nivel de nitrato presenta poca preocupación para la salud. El tomar agua que no exceda el nivel de nitrato presenta poca preocupación para la salud y puede considerarse Buena.

Agua que reúne las normas para agua potable está disponible para su uso mientras tanto. Actualmente, el problema está siendo evaluado el Departamento de Salud Local.

Si tiene preguntas sobre el resultado de las muestras, o preocupación por la salud pública, puede comunicarse con:

Operador del Agua: _____

Teléfono: _____

Departamento de Salud Local: _____

Teléfono: _____

Do Not Drink the Water

Precautionary Measures in Effect

To: Customers of the Business Water System
Date: Date



As a precautionary measure, users of the Business water system are advised that for the present time the water should not be used for drinking and cooking. An alternative source of drinking water is being provided at the **service building/office**.

These precautionary actions are being taken due to the loss of water pressure caused by describe loss of pressure, etc. Whenever a water system loses pressure for any significant length of time there is the potential for intrusion, precautionary measures are recommended.

The Business is in process of restoring pressure and will take other actions such as describe measures and collecting bacteriological samples from around the system. The samples will be collected to determine that the water quality meets the state drinking water standards.

The precautionary notice measures shall remain in effect until results from the sampling verify the water is free of coliform bacteria. Users will be advised when the bottled water precautionary measures have been lifted.

For more information contact:

Owner/Operator	_____	Phone	_____
Local Health Department	_____	Phone	_____

Public Notice

Water Quality Maximum Contamination Level Violation for Arsenic

Facility Name:

WSSN:

Date of Violation:

Water samples taken from this facility's water system detected arsenic at a concentration that exceeds the standard, or maximum contaminant level (MCL), set forth by the United States Environmental Protection Agency, (USEPA). Under the provisions of the Michigan Safe Drinking Water Act, 1976 PA 399, and rules as amended, **the MCL for arsenic is 10 parts per billion (ppb)**. The running annual average of the arsenic concentration detected at this facility is: Concentration ppb.

BE ADVISED

The USEPA sets drinking water standards and has determined that the presence of arsenic above the established MCL could pose a long-term health concern. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system and may have an increased risk of getting cancer. Major sources of arsenic in drinking water may occur from the erosion of natural deposits; runoff from orchards; or runoff from glass and electronics production wastes.

This violation and notice do not necessarily reflect a change in the arsenic content of the water at this facility. Effective January 23, 2006, the allowable level of arsenic in drinking water has been lowered and applied to this type of water system for the first time.

Although immediate adverse health effects are not expected, a supply of drinking water that meets drinking water standards is being made available for your use during this time period where corrections are being made on the system.

Presently, the problem is being evaluated by the management, in association with the **LHD**.

Thank you for your cooperation. If you have questions about this notice or our actions to correct this problem, please contact the undersigned.

Facility Representative

Phone

Date

Public Notice

Water Quality Maximum Contamination Level Violation Per- and Polyfluoroalkyl Substances (PFAS)

Facility Name:

WSSN:

Date of Violation:

Water samples taken from this facility's water system detected one or more PFAS at a concentration that exceeds the standard, or maximum contaminant level (MCL). Under the provisions of the Michigan Safe Drinking Water Act, 1976 PA 399, and rules as amended, the MCL for the seven (7) regulated PFAS chemicals is shown in the table below.

Contaminant	MCL (ng/L)	Running Annual Average Results for System Name
Perfluorononanoic acid (PFNA)	6	
Perfluorooctanoic Acid (PFOA)	8	
Perfluorooctane Sulfonic Acid (PFOS)	16	
Perfluorohexane Sulfonic Acid (PFHxS)	51	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	370	
Perfluorobutane Sulfonic Acid (PFBS)	420	
Perfluorohexanoic Acid (PFHxA)	400,000	

You do not need to use an alternative (e.g., bottled) water supply. This is not an immediate risk. If it had been, you would have been notified immediately. If you have specific health concerns, consult your doctor.

This violation and notice do not necessarily reflect a change in the PFAS content of the water at this facility. Effective August 3, 2020, the allowable level of PFAS in drinking water was established and applied to this type of water system for the first time.

BE ADVISED

The State of Michigan set drinking water standards for PFAS and has determined that the presence above the established MCL could pose a long-term health concern. Some people who drink water containing PFAS in excess of the MCL over many years could experience the following health effects.

LHD use health effects language for your situation. You may remove the ones that do not apply.

Perfluorononanoic acid (PFNA)

Some fetuses of pregnant women and infants born to mothers who drink water containing PFNA in excess of the MCL may experience developmental delays and decreased body weight gain. Major sources of PFNA in drinking water come from discharge and waste from industrial facilities; breakdown of precursor compounds.

Perfluorooctanoic Acid (PFOA)

Some fetuses of pregnant women and infants born to mothers who drink water containing PFOA in excess of the MCL may experience neurodevelopmental effects and skeletal effects. Major sources of PFOA in drinking water come from discharge and waste from industrial facilities; stain-resistant treatments.

Perfluorooctane Sulfonic Acid (PFOS)

Some fetuses of pregnant women and infants born to mothers who drink water containing PFOS in excess of the MCL may experience developmental delays and decreased body weight gain. Major sources of PFOS in drinking water come from firefighting foam; discharge from electroplating facilities; discharge and waste from industrial facilities.

Perfluorohexane Sulfonic Acid (PFHxS)

Some people who drink water containing PFHxS in excess of the MCL could experience problems with their thyroid, liver, and cholesterol levels. Major sources of PFHxS in drinking water come from firefighting foam; discharge and waste from industrial facilities.

Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)

Some people who drink water containing HFPO-DA in excess of the MCL could experience problems with their liver. Some fetuses of pregnant women and infants born to mothers who drink water containing HFPO-DA in excess of the MCL may experience developmental effects. Major sources of HFPO-DA in drinking water come from discharge and waste from industrial facilities utilizing the Gen X chemical process.

Perfluorobutane Sulfonic Acid (PFBS)

Some infants born to mothers who drink water containing PFBS in excess of the MCL may experience decreased thyroid hormone levels. Major sources of PFBS in drinking water come from discharge and waste from industrial facilities; stain-resistant treatments.

Perfluorohexanoic Acid (PFHxA)

Some people who drink water containing PFHxA in excess of the MCL could experience problems with their liver and kidneys. Major sources of PFHxA in drinking water come from firefighting foam; discharge from industrial facilities.

Please share this information with all the people who drink this water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place or distributing copies by hand, mail, or email.

Presently, the problem is being evaluated by the management, in association with the **LHD**. We anticipate discussing options and providing a path to compliance within time frame.

Okay to add information in this area regarding corrective action plans.

If you have questions about this notice or our actions to correct this problem, please contact the undersigned.

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

_____ Signature	_____ Title	_____ Date Distributed
Reminder to water supplier: This notice / signed certification must be sent to LHD .		

PUBLIC NOTICE

Water Quality Monitoring Violation

Water System Name: _____

Water Supply Serial Number: _____ Source ID: _____

Water quality at Noncommunity Public Water Supplies is regulated under the provisions of the Michigan Safe Drinking Water Act, Act 399 P.A. 1976 and Administrative Rules as amended. Under the Act, this facility is required to monitor the drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not the drinking water meets health standards.

During the monitoring period listed below, the facility did not monitor or test for the listed contaminant or contaminants and therefore cannot be sure of the quality of the drinking water during that time.

Contaminant: _____

Monitoring Period: _____

System Name is in the process of obtaining water quality samples or has since obtained the necessary samples as required by the Safe Drinking Water Act. The administration will work to make sure that the required water quality testing schedule is observed in the future.

If you have questions concerning water quality sampling at this facility, please contact:

Facility Representative

Phone

Date

Return a signed copy to:
LHD Contact Information

AVISO PÚBLICO

Violación del monitoreo de calidad del agua

Nombre del sistema de agua: _____

Número de serie de suministro de agua: _____ ID de la fuente: _____

La calidad del agua en los suministros de agua pública no comunitarios es regulada según las disposiciones de la Ley de Agua Potable Segura de Michigan, Ley 399 P.A. 1976 y las Normas Administrativas, con sus enmiendas. La ley define requisitos de monitoreo y toma de muestras de agua específicos que deben seguir los proveedores.

Esta instalación no tomó muestras para los parámetros indicados a continuación, durante el periodo de monitoreo detallado:

Contaminante:

Periodo de monitoreo:

System Name se encuentra en proceso de obtener muestras de calidad del agua o desde entonces ha obtenido las muestras necesarias según lo requiere la Ley Agua Potable Segura. La administración trabajará para asegurarse de que se respete el cronograma necesario de pruebas de calidad del agua en el futuro.

Si tiene preguntas con respecto a la toma de muestras de calidad del agua en esta instalación, póngase en contacto con:

Representante de la instalación

Teléfono

Fecha

Envíe una copia firmada a:
LHD Contact Information

Summary of Public Education (PE) Requirements and Certificate of Distribution

For Noncommunity Water Supplies that Exceed the Lead Action Level

Supply Name: _____

Water Supply Serial Number (WSSN): _____

Public education (PE) materials must be delivered as soon as possible but within 60 days after the end of the monitoring period in which the lead exceedance occurred or within 60 days of calculating the lead exceedance, whichever is sooner.

The PE materials must be repeated once every 12 months for as long as the lead action level is exceeded. Once completed, send documentation to the local health department (LHD) that contains a demonstration that the water supply has delivered the PE materials that meet the content requirements and the delivery requirements.

To meet this requirement, water supplies must document delivery activities. Send this checklist or similar documentation to the LHD along with a sample copy of the PE material that was distributed.

The following is required:

- ☐ Post informational material on lead in drinking water in a public place or common area in each of the buildings served by the water supply.

Locations Posted: _____

- ☐ Distribute PE printed material to each person served by the water supply. The water supply may use electronic transmission instead of or combined with printed materials as long as it achieves at least the same coverage.

Date Delivered: _____

- ☐ If applicable, make a good faith effort to locate any organizations being served by the water supply system in mention, such as child care centers, and deliver PE materials along with an informational notice that encourages distribution to all potentially affected customers or users.

Organizations Contacted: _____

*I affirm that public education material content and delivery requirements have been completed.
I am enclosing a sample of the public education material we delivered.*

Signature

Date

Printed Name

Title

Within 10 days of the end of the period in which the PE is required, a completed and signed copy of this certification must be returned to the Local Health Department.

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER

This notice is brought to you by:

Supply Name: _____

Water Supply Serial Number (WSSN): _____

Date Distributed: _____

The supply listed above found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this notice closely to see what you can do to reduce lead in your drinking water.

HEALTH EFFECTS OF LEAD

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

SOURCES OF LEAD

Drinking water is one possible source of lead exposure. Lead is a common metal found in the environment and enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead. Plumbing products such as pipes and fixtures, including those advertised as "lead free," may contribute lead to drinking water. The law currently allows these products with up to 0.25 percent lead to be labeled as "lead free." Older fixtures may contain higher levels of lead.

STEPS TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

1. **Run the water to flush out lead.** Run water for 15-30 seconds or until it becomes cold or reaches a steady temperature before using it for drinking or cooking, if it hasn't been used for several hours. This flushes lead-containing water from the pipes.
2. **Use cold water for cooking and preparing baby formula.** Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.
3. **Do not boil water to remove lead.** Boiling water will not reduce lead levels.
4. **Get your child tested.** Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.
5. **Identify if plumbing fixtures contain lead.** Faucets, fittings, and valves may contribute lead to drinking water unless they have been replaced since 2013. Any new connecting plumbing and fittings should meet the 2014 lead-free definition. If you replace your faucet, buy a new one that meets the 2014 lead-free definition. Visit the National Sanitation Foundation Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

WHAT HAPPENED? WHAT IS BEING DONE?

LHD must complete this section with the correct language before sending to the water supply. Example language for this section below.

The action level was exceeded for lead during the most recent round of monitoring of drinking water taps. Sample locations and sample results are available and will be posted via the Consumer Notice of Lead Results.

Noncompliant taps have been removed from service.

We are beginning to take corrective action. This involves additional sampling. Also, we are performing plumbing assessment to determine if fixtures and connecting plumbing should be replaced with new “lead-free” materials, and assessing the option of corrosion control treatment.

For More Information

Call us at:

*For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Website at **www.epa.gov/lead** or contact your health care provider.*

Consumer Notice of Drinking Water Lead and Copper Sampling (LCCN)

Attention: Drinking Water Consumer

«SYSTEMNAME» – WSSN: «WSSN»

The above-listed facility is classified as a public water system; therefore, we are responsible for providing you with drinking water that meets state and federal standards. The **attached Drinking Water Lead and Copper Sample Results Table** provides information on the location, date, and water sample result(s) of lead and copper testing at:

«SYSTEMNAME»

All lead and copper samples will be reviewed by your local health department to assess compliance with lead and copper regulations and determine the 90th percentile value.

What Does This Mean?

Under the authority of the Safe Drinking Water Act, 1976 PA 399, as amended, the U.S. Environmental Protection Agency (U.S. EPA) set the action level for lead in drinking water at 0.015 milligrams per liter (mg/L) and copper at 1.30 mg/L. Beginning January 1, 2025, the action level for lead will be 0.012 mg/L. This means water supply systems must ensure that water from taps used for human consumption does not exceed this level in at least 90 percent of the sampling sites tested (90th percentile value). The action level is *the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water supply shall follow*. If water from the tap does exceed this limit, then the facility must take certain steps to correct the problem. Because lead may pose a serious health risk, the U.S. EPA set a Maximum Contaminant Level Goal (MCLG) of zero for lead. The MCLG for copper is 1.30 mg/L. The MCLG is *the level of a contaminant in drinking water below which there is no known or expected risk to health*. MCLGs allow for a margin of safety.

What Are the Health Effects of Lead and Copper?

Lead can cause serious health and development problems. It can cause damage to the brain and kidneys and interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Steps to reduce exposure to lead and copper in drinking water:

- 1) Establish a flushing program – run water for 1-2 minutes until it becomes as cold as it will get.
- 2) Use only cold water for drinking, cooking, and preparing baby formula.
- 3) Do not boil the water to remove lead and copper – boiling water will not reduce lead and copper levels.

Although the primary sources of lead exposure for most children are from deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil, the U.S. EPA estimates that 20 percent or more of human exposure to lead may come from drinking water. For information on reducing lead exposure and the health effects of lead, you may visit the U.S. EPA's Web site at <https://www.epa.gov/lead>, call the National Lead Information Center at 800-424-LEAD (5323), or contact your health care provider. For more information on copper, you may visit the U.S. Center for Disease Control's website at <https://www.atsdr.cdc.gov/index.html>, or contact your health provider. If you have further questions, please contact your water supply representative at:

Printed Name

Telephone Number/Email

I certify this public water supply has provided the Consumer Notice of Drinking Water Lead and Copper Sampling through public posting within 30 days of knowing the result(s). This notice includes required content, as approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

Signature

Title

Date of Public Posting

RETURN A COPY OF THIS SIGNED NOTICE TO EGLE-EH@MICHIGAN.GOV OR FAX TO 517-241-1328

Lead and Copper Consumer Notice

Drinking Water Sample Results Table

(Safe Drinking Water Act, 1976 PA 399, as amended)

The table below lists the most recent drinking water quality Lead and Copper sample results. Lead and Copper samples are collected where cold water is typically drawn for consumption, such as drinking fountains, kitchen and classroom sinks, and break room faucets. Each facility has an established sample siting plan to identify approved sample points, in addition to a predetermined monitoring frequency.

Water System Name : [REDACTED]

WSSN : [REDACTED]

<u>Sample Number</u>	<u>Sample Location</u>	<u>Sample Date</u>	<u>Analyte Code</u>	<u>Results *</u> milligrams / liter	<u>Comment</u>
LK88466	MEETING ROOM	8/28/2023	Lead	0	
LK88466	MEETING ROOM	8/28/2023	Copper	0	
LK88467	PRES SCHOOL PLAY ROOM SINK	8/28/2023	Lead	0	
LK88467	PRES SCHOOL PLAY ROOM SINK	8/28/2023	Copper	0	
LK88468	E.H.S. OFFICE SINK	8/28/2023	Lead	0	
LK88468	E.H.S. OFFICE SINK	8/28/2023	Copper	0	
LK88469	CHURCH HALLWAY DRINKING FOUNTAIN	8/28/2023	Lead	0	
LK88469	CHURCH HALLWAY DRINKING FOUNTAIN	8/28/2023	Copper	0.07	
LK88470	EHS LEFT DRINKING FOUNTAIN	8/28/2023	Lead	0	
LK88470	EHS LEFT DRINKING FOUNTAIN	8/28/2023	Copper	0	

*** The Action Level for Lead is 0.015 milligrams per liter and for Copper is 1.3 milligrams per liter. All Lead and Copper sample results will be reviewed by your local health department to assess compliance with Lead and Copper regulations under the Safe Drinking Water Act, 1976 PA 399, as amended, the U.S. Environmental Protection Agency (U.S. EPA). Results that are below the detection limit of the analytical method employed by the laboratory are listed as zero.**

For information on the health effects of Lead/Copper, and how to decrease your exposure, call the Safe Drinking Water Information Hotline at +1 (800)-426-4791, visit the U.S. EPA's Web site at www.epa.gov/lead, or contact your health care provider.

Printed: 9/11/2023

**Summary of Public Advisory Requirements and
Certificate of Distribution
For Noncommunity Water Supplies that Exceed the Lead Action Level**

A Public Advisory (PA) must be issued within three business days after the local health department (LHD) notifies a Water Supply that an exceedance of the lead action level has occurred. Within ten days after the end of the period in which a PA is required, send documentation to the LHD in the district/county that the PA was issued, using an appropriate method within the required timeframe.

To meet this requirement, water supplies may use this checklist to document the PA issuance activities. Send this checklist, or similar documentation to the LHD along with a sample copy of PA that was issued.

The following is required:

Post PA material in a public place or common area in each of the buildings served by the water supply.

Location(s) Posted: _____

Distribute PA printed material to each person served by the water supply. The water supply may use electronic transmission instead of or combined with printed materials if it achieves at least the same coverage.

Date Delivered: _____

If applicable, make a good faith effort to locate any organizations being served by the water supply (e.g., child care centers), and deliver PA materials along with an informational notice that encourages distribution to all potentially affected customers or users.

Organizations contacted: _____

I affirm that a Public Advisory has been issued. I am enclosing a copy of the Public Advisory.

Signature

Water Supply Name

Printed Name

Water Supply Serial Number (WSSN)

Title

Within 10 days of the end of the period in which a PA is required, a completed and signed copy of this certification, along with a copy of the PA, must be returned to the Local Health Department. The PA is to advise consumers of the action level exceedance and is separate from Lead Public Education requirements.

Sample Public Advisory

LHD: The water supply should put this on their letterhead and add information as necessary. The water supply cannot downplay the severity of the information in this document

RE: Public Advisory of Lead Action Level Exceedance

You are receiving this notification because Facility Name has recently completed routine monitoring for lead and copper in drinking water. Based on the samples collected, Facility Name has exceeded the 90th Percentile Action Level of 15 parts per billion for lead.

The Facility Name is taking measures to ensure elevated fixtures are removed from use and, if necessary, an alternative source (e.g., bottled water) will be made available. This advisory is the first of several steps Facility Name is required to complete after exceeding the action level for lead.

Lead can cause serious health problems if too much enters your body from drinking water or other sources. Because lead may pose a serious health risk, the U.S. Environmental Protection Agency (USEPA) set the maximum contaminant level goal (MCLG) at zero for lead. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health.

Based on the USEPA recommendations, the most important things you can do to reduce your exposure to lead is to:

- Use cold water for drinking and cooking
- Use cold water for preparing baby formula
- Let the water run for 30 seconds to two minutes, or until cold prior to use
- Do not boil your water with lead contamination prior to consumption

For more information please visit www.michigan.gov/egleleadpublicadvisory or contact Owner/Operator at Phone Number or Email Address.

NOTICE

Lead levels in first draw water samples from this tap have tested above the EPA action level of 15 parts per billion. Action is being taken by the supply to address this issue. Until such time levels are found to be acceptable, do not use this tap for drinking water purposes.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
System Name Failed to Conduct a Level 1 Assessment
Treatment Technique Violation

During recent routine monitoring, System Name tested positive for total coliforms. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. Coliforms indicate the need to look for potential problems in water treatment or distribution systems. When this occurs, System Name is to conduct assessments to identify problems and correct any problems that are found.

LHD: Describe the TT violation, using the mandatory language

We failed to conduct the required assessment by . **and/or** We failed to correct all identified sanitary defects that were found during the assessment(s) by .

As our customers, you have a right to know what happened and what we are doing to correct this situation.

System Name failed to meet the deadline for completing the assessment. Failure to meet the deadline is a violation of a Treatment Technique and requires we inform our customers with this Public Notification.

What should I do?

You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.

If you have a severely compromised immune system, are pregnant, or are elderly, you may be at increased risk and should seek advice from your healthcare provider about drinking this water. You should also seek advice from your healthcare provider about using the water if you have an infant. General guidelines on ways to lessen the risk of infection by bacteria and other disease-causing organisms are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

Since total coliform bacteria are generally not harmful themselves, this is not an emergency. If it had been you would have been notified within 24 hours. Failure to identify and correct the defects has the potential to cause continued distribution system contamination. Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

What is being done?

We are working with the LHD on a mutually agreed-upon date by when the Level 1 assessment will be conducted at System Name. For more information, please contact owner/operator by phone at number or by US Mail to mailing address.

Please share this information with all the people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being provided to you by the System Name; Water Supply Serial Number (WSSN) .

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

A copy of this signed notice must be sent to LHD

IMPORTANT INFORMATION ABOUT DRINKING WATER
System Name Failed to Conduct Seasonal Start Up Procedures
Treatment Technique Violation

Before opening each year we are required to complete certain start-up procedures to make sure the water we provide is safe to drink. This year we failed to describe what they failed to do before providing water, which is a violation of the Safe Drinking Water Act. As our customers, you have a right to know what happened and what we are doing to correct this situation. Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

Remove this paragraph if the supply completed the pre-opening samples.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During <compliance period>, we "did not complete all monitoring or testing" for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.

What should I do?

If you have specific health concerns, consult your doctor.

If you have a severely compromised immune system, are pregnant, or are elderly, you may be at increased risk and should seek advice from your healthcare provider about drinking this water. You should also seek advice from your healthcare provider about using the water if you have an infant. General guidelines on ways to lessen the risk of infection by bacteria and other disease-causing organisms are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

Failure to perform the required start-up procedures prior to serving water to the public has the potential to distribute contaminated water. When our system shuts down operation, the lack of pressure in our pipes can allow the entry of bacteria and other disease-causing microorganisms into the drinking water. By performing start-up procedures such as flushing the pipes, disinfecting the distribution system, and collecting two coliform bacteria samples before we open, we can be sure that we are providing you with safe water.

What is being done?

We are working with LHD on a mutually agreed-upon date by when the Start Up Procedures will be conducted at System Name annually.

For more information, please contact owner/operator by phone at number or by US Mail to mailing address.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being provided to you by the System Name; Water Supply Serial Number (WSSN) .

Date posted: _____

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

A copy of this signed notice must be sent to LHD.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
System Name Failed to Correct a Problem During an Assessment of the Water System

During recent routine monitoring, our water system tested positive for total coliforms. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. System Name failed to meet this deadline. When this occurs, System Name is to conduct assessments to identify problems and correct any problems that are found.

LHD: Describe the TT violation, using the mandatory language

We failed to conduct the required assessment by . and/or We failed to correct all identified sanitary defects that were found during the assessment(s) by .

As our customers, you have a right to know what happened and what we are doing to correct this situation.

System Name failed to meet the deadline for completing the assessment. Failure to meet the deadline is a violation of a Treatment Technique and requires we inform our customers with this Public Notification.

What should I do?

- You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, are pregnant, or are elderly, you may be at increased risk and should seek advice from your healthcare provider about drinking this water. You should also seek advice from your healthcare provider about using the water if you have an infant. General guidelines on ways to lessen the risk of infection by bacteria and other disease-causing organisms are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791

What does this mean?

Since total coliform bacteria are generally not harmful themselves, this is not an emergency. If it had been you would have been notified within 24 hours. Failure to identify and correct the defects has the potential to cause continued distribution system contamination. Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

What is being done?

We are working with the LHD on a mutually agreed-upon date by when the describe required action will be met at System Name.

For more information, please contact owner/operator by phone at number or by US Mail to mailing address.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being provided to you by the System Name; Water Supply Serial Number (WSSN) .

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

A copy of this signed notice must be sent to LHD

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

System Failed to Correct a Problem Discovered During an Assessment of the Water System After Testing Positive for E. coli. This is a Treatment Technique Violation.

During recent monitoring, System tested positive for E. coli. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for E. coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, System Name is to conduct assessments to identify problems and correct any problems that are found.

LHD: Describe the TT violation, using the mandatory language

We failed to conduct the required assessment by . **and/or** We failed to correct all identified sanitary defects that were found during the assessment(s) by .

Failure to meet the deadline is considered a violation of a Treatment Technique and requires that we inform our customers with this Public Notification.

As our potential water consumers, you have a right to know what happened and what we are doing to correct this situation. Notification of the E. coli in our water was provided on enter date when Tier 1 public notice of the MCL violation that triggered the assessment was provided. Although recent sampling has indicated coliform bacteria are absent, we are still required to assess the system and correct any defects found.

What should I do?

- You do not need to boil your water or take corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, are pregnant, or are elderly, you may be at increased risk and should seek advice from your healthcare provider about drinking this water. You should also seek advice from your healthcare provider about using the water if you have an infant. General guidelines on ways to lessen the risk of infection by bacteria and other disease-causing organisms are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. If it had been you would have been notified within 24 hours.

Failure to identify and correct system defects has the potential to cause distribution system contamination. Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

What happened? What is being done?

We are working with the LHD on a mutually agreed-upon date by when the requirement will be met at supply.

For more information, please contact owner/operator.

Please share this information with all the other people who drink this water.

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

A copy of this signed notice must be sent to LHD

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

System Name Failed to Obtain a Certified Operator

System Name recently violated a drinking water requirement. Although this is not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

The Safe Drinking Water Act requires us to obtain a certified operator who has the skills, knowledge, and experience to maintain and operate our water system effectively. We do not have a properly certified operator and therefore cannot be sure that our water system is operated correctly.

What happened?

State how it became known to the local health department that the system has no operator. How long has the system been without a certified operator? State what the local health department required, such as interim measures, if any

What should I do?

There is nothing you need to do. You do not need to use an alternate source or take other corrective actions.

Systems without open MCL or monitoring violations may add...Monitoring indicates no contaminants are in the water at levels above a state drinking water standard.

However, we cannot be sure that our water system is operated correctly. If you have specific health concerns, consult your doctor.

What does this mean?

This is not an emergency.

What is being done?

Describe corrective action

We anticipate hiring or contracting with a certified operator by date.

For more information, please contact name at phone or email.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

A copy of this signed notice must be sent to LHD

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

System Name Failed to Obtain a Certified Operator

System Name recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

The Safe Drinking Water Act requires us to obtain a certified operator who has the skills, knowledge and experience to maintain and operate our water system effectively. We do not have a properly certified operator and therefore cannot be sure that our water system is operated correctly.

What happened?

State how it became known to the local health department that the system has no operator. How long has the system been without a certified operator? State what the local health department required, such as interim measures, if any

What should I do?

There is nothing you need to do. You do not need to use an alternate source or take other corrective actions.

Systems without open MCL or monitoring violations may add...Monitoring indicates no contaminants are in the water at levels above a state drinking water standard.

However, we cannot be sure that our water system is operated correctly. If you have specific health concerns, consult your doctor. If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. Our water system currently is being treated analyte for water quality purposes. Failure to have an operator qualified to operate this treatment system may mean that the quality of water served to consumers may be compromised.

What is being done?

Describe corrective action

We anticipate hiring or contracting with a certified operator by date. For more information, please contact name at phone or email.

Certification

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

A copy of this signed notice must be sent to LHD

Example Violation Notice

LHD: Remove or add information as needed.

PUBLIC NOTICE VIOLATION

RE: Public Notice Violation for Supply, WSSN

Dear :

The LHD records show that Supply is in violation of the Safe Drinking Water Act (SDWA), 1976 PA 399, as amended.

A noncommunity water supply (NCWS) that fails to meet or comply with requirements of the SDWA is required to notify the public in a prescribed format. The procedures for requiring a NCWS to enact a public notice (PN) depends largely upon the type and concentration of the contaminant involved or the severity of the violation. Informed discretion on the part of the LHD will be required to determine the best course of action.

Along with the PN, the NCWS may need to provide an alternative source of drinking water until the problem has been corrected. A PN warns all potential users that the NCWS has been found to be in violation of the SDWA. The PN must include language describing possible health effects from consuming the water. The PN must also include a location where safe water is available if the NCWS is required to provide an alternate source of water. For many NCWS, an acceptable method of providing public notification is to post warning signs at all potential drinking water taps.

On Date, a violation notice and PN were issued to Supply, with a PN posting within 24 hours. PN failed to occur and is now required to remedy this violation.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this notice, please contact me at email; phone; or at address.

Chapter 8 Appendices

Compliance and Enforcement

<u>Documents</u>	<u>Number of Pages</u>
H01 Failure to Correct Violation Letter.....	1
H03 Failure to Collect Samples Letter	1
H07 Administrative Fines for Monitoring and Reporting Violations Policy ODWMA-399-001	8
H07.1 Administrative Fines for Drinking Water Standards Policy ODWMA-399-012.....	5
H08 Escalated Enforcement Action Policy DWMAD-399-029	4

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Failure to Correct Violation
Imminent Public Health Concern at System Name WSSN:

Dear _____ :

On date a follow-up inspection was made on the water supply system at system name. The purpose of this follow-up inspection was to confirm that the required corrections had been made on the water supply as outlined in the prior sanitary survey letter of date.

The items of noncompliance were as follows:

- 1.
- 2.

The follow-up inspection showed that the necessary corrections have not been made and System Name remains in noncompliance with Michigan's Safe Drinking Water Act, Act 399, P.A. 1976 and Administrative Rules. The failure to correct these deficiencies in a timely manner continues to allow a public health concern to remain.

Until _____ is replaced/repared the water is considered at risk for contamination. Precautionary measures are to be **immediately implemented** until _____ is replaced/repared. Precautionary measures include:

- Providing an alternate source of potable water to users of the supply (bottled water).
- Provide public notice posting indicating that the source of the water supply has been compromised due to a construction deficiency. The posting must include the following information:
 1. Steps that the water system is taking to correct the problem.
 2. The availability of an alternate source of drinking water.
 3. Preventative measures the consumer should take until the violation is corrected.
 4. Telephone number where additional information can be obtained.
- A copy of the required public notice posting is enclosed. Please sign a copy of the posting and return it to our office within 30 days.

The public notice posting is to be placed in a prominent location and stay in place until the construction violation is corrected. After the noncompliant item has been replaced/repared, and before the well is put back into service, at least 2 consecutive total coliform bacteriologic samples shall be collected with the results showing the absence of coliform organisms.

Your water supply serial number is WSSN _____, and must be recorded on the water sample form. Act 399 specifies that it is the owner/operator's responsibility to collect and submit the required water samples for analysis and to maintain and operate the water system in a sanitary condition. Submit water sample results to: LHD Email address.

Both the correction of the construction deficiency and the required special purpose water sampling must be done immediately. Please contact this office as soon as the required posting and corrective actions are complete. If you have questions regarding the sanitary survey, the construction deficiencies or the sampling requirement, please call _____.

EXAMPLE LETTER

LHD: Remove or add information as needed.

VIA CERTIFIED AND U.S.MAIL

RE: Failure to Collect Samples at System Name WSSN

Dear Owner/Operator:

The LHD has documented that System Name is in violation of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and corresponding Administrative Rules (Act 399). Specific violations are as follows:

1. The supplier of water has failed to collect samples and cause analysis to be made for coliform bacteria to determine compliance with state drinking water standards, as required by R 325.10704. The supplier of water has failed to collect samples of water from representative locations on the distribution system to be analyzed at regular intervals and in numbers according to the population served by the system.
2. The supplier of water has failed to collect samples and cause analysis to be made for nitrate to determine compliance with state drinking water standards, as required by R 325.10710. The supplier of water has failed to collect a nitrate sample from a designated location representing the source water.

On multiple occasions, you were sent notices of violation and public notices; most recently on Date. You failed to respond to the notices and collect the required samples.

YOU ARE HEREBY ORDERED to correct the inadequate monitoring of a public water supply system pursuant to Section 15 of Act 399, MCL 325.1015. The following shall be accomplished by **Date**:

Collect the required bacteriologic and nitrate sample(s) from the water system and submit such sample(s) to a certified laboratory for analysis. Routine monitoring shall continue if the public water supply is in operation. Sample results are to be submitted to the LHD. Questions regarding specific sampling requirements and monitoring schedules can be obtained by contacting LHD Sanitarian.

A Notice of Noncompliance will also be forwarded to your food service inspector. Failure to comply with the Michigan Safe Drinking Water Act, 1976 PA 399 as amended, is a direct violation of the 2009 Michigan Food Code.

Failure to comply with the stipulations set forth in this letter will result in further enforcement action by the LHD, including increased monitoring, fines, and potentially formal action involving the Michigan Department of Environment, Great Lakes, and Energy (EGLE). The LHD anticipates your cooperation in resolving this matter. Should you have any questions, please contact me email or phone.

cc: EGLE EQA
MDARD Licensure Contact

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: June 19, 1997 Revised Date: August 25, 2014 Reformatted Date:	Subject: Administrative Fines for Monitoring and Reporting Violations in Community and Noncommunity Water Supplies Division/Office and Program Names: ODWMA-Public Water System Supervision Program Number: ODWMA-399-001 Page: 1 of 7		Category: ☐ Internal/Administrative ☐ External/Non-Interpretive ☒ External/Interpretive Type: ☐ Policy ☐ Procedure ☒ Policy and Procedure

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

PURPOSE:

Administrative fines are a tool for the Office of Drinking Water and Municipal Assistance (ODWMA) and its authorized agents to meet regulatory enforcement responsibilities of monitoring and reporting requirements and to promote community water supply (CWS) and noncommunity water supply (NCWS) compliance with statutes and rules. This policy provides guidance for staff to implement the administrative fines authority. This policy replaces Drinking Water and Radiological Protection Division policy DWRP-03-001, Administrative Fines – Monitoring and Reporting Violations, dated June 19, 1997, Revision #3 dated September 2001.

AUTHORITY:

Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), Section 7 being MCL 325.1007.

STAKEHOLDER INVOLVEMENT:

Stakeholders were engaged during the 2014 revision. Stakeholders were those affected by administrative fines including local health departments that impose fines and water supplies that receive fines. Input was incorporated, as appropriate.

DEFINITIONS:

"Contaminant group" – One of five groups of contaminants for which monitoring is required to determine compliance; microbial in Rule 602; surface water treatment in Rules 611a, 611b, and 720; lead copper in Rule 604f and 710b; disinfection in Rule 610a and 719e; and chemical radionuclide in Rules 603, 604b, 604c, 604d, and 717b of the administrative rules promulgated under Act 399. The contaminant groups are listed in the table at the end of this policy.

"Monitoring period" - The time frame during which sampling must be performed in a given year. Examples include a month, a quarter, June through September of the year due, and January 1 through September 30 of the year due.

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"Reporting event" – Delivery of the required information to the public, the ODWMA, or the local health department (LHD), or to all three by the due date using the delivery methods and the span of distribution applicable to the information.

"Sampling event" – Monitoring for one or more contaminants within a single contaminant group, at one or more sample sites, during a specific monitoring period within a given year, and submission of the result to the ODWMA or the LHD by the reporting due date.

POLICY:

1. General

Notifying public water supplies of regulatory requirements is a core activity of the public water system supervision program. The long-standing technical assistance philosophy is to encourage compliance. Technical assistance tools to notify and remind supplies of monitoring and reporting (M/R) requirements include sanitary surveys, annual monitoring schedules, reminder letters, and others. However, when a supply misses a sampling or reporting event and incurs a violation:

- a. Direct the supply to return to compliance as soon as possible.
- b. Warn the supply that fines will result after either of the following:
 - i. Future violations of the same event.
 - ii. Failing to issue the Public Notice (PN) for the current missed event.
- c. Issue an administrative fine when a water supply misses the same event a second time within the 12-month period following the failure.
- d. Issue an administrative fine when a water supply fails to issue PN.
- e. Give the water supply an opportunity to resolve a disputed fine.
- f. Void an administrative fine when circumstances warrant.

2. Violations applicable to this policy include:

- a. Failing to meet the requirements of a reporting event. Reporting events applicable to this policy include submitting monthly operation reports (MOR), issuing Consumer Confidence Reports (CCR) for CWS, issuing Annual Water Quality Reports for nontransient NCWS that are K12 schools or daycare centers, distributing Consumer Notices of Lead Results, or issuing public notice (PN) following monitoring violations (Note: failure to issue a PN following a maximum contaminant level [MCL] violation is addressed in Policy and Procedure number ODWMA-399-012 titled Administrative Fines – Violation of State Drinking Water Standards).

Reporting requirements not applicable to this policy include Annual Pumpage Report, Cross Connection Report, Lead and Copper Report Form, CCR Certificate of Distribution, or other reporting requirements. Those violations may be included in enforcement actions for other violations. Note that Public Education (PE) following an

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exceedence of the lead action level at the 90th percentile is not a reporting requirement, but a treatment technique violation. Fines for treatment technique violations are covered in Policy and Procedure number ODWMA-399-012.

- b. Failing to meet the requirements of a sampling event. Only a single fine applies for a single sampling event whether the supply failed to monitor, failed to submit the results of monitoring, or failed to do both. Examples of single sampling events include, but are not limited to, the following:

Contaminant Group	Sample Sites	Monitoring Period
Total Coliform (TC)	Distribution locations	1 st through last day of a month
TC	Distribution repeat locations and triggered source locations following a distribution TC positive result (TC+)	Within 24 hours of notification of TC+
TC	5 temporary routine distribution sites for supplies that routinely sample fewer than 5 sites	1 st through last day of the month following TC+
Chemical/Radionuclides	Entry points to the distribution system	January 1 through September 30
Lead/Copper	Distribution taps for lead and copper	June 1 through September 30
Lead/Copper	Distribution taps water quality parameters	A two-week period
Surface Water Treatment	Combined filter confluence point (turbidity)	Daily/continuous for a month
Surface Water Treatment	Entry points (chlorine residual)	Daily/continuous for a month
Disinfection	Distribution sites for disinfection byproducts	1 st through last day of month due
Disinfection	Total organic carbon at source and combined filter effluent point and alkalinity at source (by-product precursors)	1 st through last day of a month

- c. Return to Compliance. Use the violation notice to direct the supply to return to compliance as soon as possible. For most entry point monitoring due September 30, set a new due date of December 31 to avoid a federal violation. For monitoring events that must happen during a particular time of the year, this means the next available monitoring period. For example, for disinfection byproducts annual or triennial monitoring assign a new due date of next year during the peak month; for lead and copper reduced monitoring, assign a new due date of next year between June 1 and September 30. For other requirements, assign a new due date that is timely, but gives the supply sufficient time to complete the task.

3. Notifications and Reminders of Requirements

- a. Notify water supplies of M/R requirements in writing, such as in a monitoring schedule, an annual Monitoring Reminder Letter, or in sanitary survey.
- i. For monitoring requirements, include location(s) to sample, specific parameters or groups of contaminants to analyze, and time frame or due date to complete monitoring and submit results. The notification should, but is not required to, encourage water supplies to complete required monitoring early in the monitoring period to avoid complications that could result in a violation.

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- ii. For reporting requirements, include the report type (e.g., MOR, PN), the party that must receive the information (e.g., the DEQ, customers), the delivery methods and span of distribution (e.g., mail or directly deliver to customers), and the time frame or due date to complete the reporting requirement (e.g., by July 1).
- b. Do not issue a fine for the first missed event. Include a warning in the violation letter that a second missed event in 12 months will result in a fine. Issue a fine for the a missed event that occurs within the 12-month period following the previous missed event. For missed sampling events, include a warning in the violation letter that failing to issue the PN will result in a fine.
- c. Issue a fine for failure to distribute a PN. Even though this may not be the second missed PN event in 12-months, the violation letter of the missed event outlines the PN requirements and warns the supply of a fine.

4. Administrative Fine Determinations

A table of fine amounts is on the following page. Fine amounts are based on the following:

- a. Type of missed sampling or reporting event. Violations of different sampling events result in separate fines. For example, failure to sample the distribution system for lead and copper and failure to sample the entry point for arsenic are separate sampling events and result in separate fines. Similarly, violations of different reporting events result in separate fines. Conversely, only a single fine applies whether the supply failed to meet some or all of the requirements of a single event. For example, only one fine applies if a supply collected only two of the three repeat distribution samples and none of the triggered source water samples following a distribution system TC+.
- b. Supply size. Fine amounts are greater for supplies serving more people.
- c. Missed due date. Fine amounts increase when an event is missed again or when new due dates are not met.

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Table of Fines for Monitoring And Reporting Violations for Public Water Supplies		
Sampling Events (collect samples and report results to the ODWMA or LHD)	Serves ≤10,000	Serves >10,000
1. A violation of a sampling event results in a written warning (for example a violation letter) but no fine.	\$0	\$0
2. The second violation of a sampling event from the same contaminant group within 12 months of the previous violation results in a fine.	\$200	\$1,000 per day ²
3. Each additional violation of the sampling event from the same contaminant group within 12 months of the previous violation results in a fine. The total amount of the fines for consecutive violations of a sampling event from the same contaminant group shall not exceed the maximum fine. ¹	\$400	\$1,000 per day ²
Reporting Events, except Public Notification (includes MOR, CCR, Annual Water Quality Reports for K-12 and daycare centers, and Consumer Notices of Lead Results):		
1. A violation of a reporting event results in a written warning (for example a violation letter) but no fine.	\$0	\$0
2. The second violation of a reporting event of the same report within 12 months of the previous violation results in a fine.	\$200	\$1,000 per day ²
3. Each additional violation of the reporting event of the same report within 12 months of the previous violation results in a fine. The total amount of the fines for consecutive violations of a reporting event of the same report shall not exceed the maximum fine. ¹	\$400	\$1,000 per day ²
Public Notification Reporting Events: The monitoring violation letter directs the supply to issue a PN.		
1. A violation of a PN reporting event results in a fine.	\$200	\$1,000
2. A violation of a PN reporting event by the new due date, and each subsequent due date until the PN is completed, results in a fine. The total amount of the fines for the missed PN and all subsequent missed new due dates shall not exceed the maximum fine. ¹	\$400	\$1,000 per day ²
¹ Maximum fine	\$2,000	\$10,000
² From most recent due date		

5. Dispute Administrative Fines

When administrative fines are assessed but disputed by the water supply, give the water supply an opportunity to resolve the dispute. If the case is not resolved through informal means, the ODWMA or LHD or its authorized agent will schedule a hearing to resolve the case as outlined in the Administrative Procedures Act, 1969 PA 306, as amended.

6. Ongoing Monitoring or Reporting Violations

The desired outcome of this policy is to achieve and maintain compliance. When a supply does not maintain compliance, but repeatedly violates monitoring and reporting requirements, pursue escalated enforcement actions while continuing to levy administrative fines under this policy.

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7. Voiding a Fine

A fine may be voided before or after a requested hearing, with supporting documentation, under one or more of the following circumstances:

- a. The water supply provides supporting documentation that the report was submitted when required, such as providing a certified mail receipt.
- b. The sample was collected but could not be accurately analyzed due to either a sample transit problem or laboratory error.
- c. Due to a change in ownership, the new owner was not notified of the requirements.
- d. The water supply was unable to meet the monitoring or reporting requirements due to compelling reasons or extenuating circumstances beyond the reasonable control of the water supply, for which documentation is provided to the ODWMA or LHD and found to be satisfactory to the Field Operations Section Chief for CWS or the Environmental Health Section Chief in consultation with the appropriate LHD Environmental Health Director for NCWS.

PROCEDURES:

Who	Does What
ODWMA staff for CWS, or the LHD staff for the NCWS	Notifies the supply, in writing, of the M/R requirements. Issues violations and directs public notification, if notification is required. Warns supplies that future missed events will result in administrative fines. Assigns new due date to complete the requirement, if appropriate. Issues fine. For CWS violations, ODWMA staff forwards the request for fine to the Lansing Central Office CWS program staff for approval. Lansing Central Office CWS program staff approves and sends to Administration Section for invoice. For NCWS LHD forwards citation including fine to supply. Forwards copy to Administration Section. Recommends voiding a fine requiring supervisor approval.
Administration Section	For CWS, creates the invoice for the administrative fine and mails it to the water supply. For NCWS, creates file in anticipation of payment of fine.

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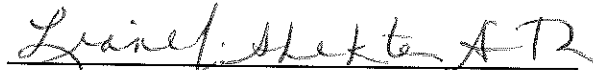
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Who	Does What
Field Operations Section Chief for CWS or Environmental Health Section Chief in consultation with the LHD Environmental Health Director for NCWS	Reviews and approves voiding a fine.
ODWMA staff for CWS program, or the LHD staff for the NCWS Program	Resolves issue if supply believes the fine is in error or should not be issued. Holds an informal meeting among affected staff; the supply and a reviewing officer to provide an opportunity for the supply to show compliance.
Reviewing Officer	Hears both positions presented at the informal meeting. Writes memo to ODWMA Chief with recommendations. Drafts letter for ODWMA Chief's signature to the supply with findings.

ATTACHMENT:

Contaminant Groups

OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

Policy and Procedure ODWMA-399-001
Attachment

Five Contaminant Groups for Public Water Supply Compliance with R 325.10101 (Rule 101) et al.

1. Microbial Group in Rule 602	3. Lead/Copper Group in Rules 604f and 710b	4. Disinfection Group in Rules 610, 610a, and 719e
Total coliform Fecal coliform E. Coli	Lead Copper pH Alkalinity Calcium Conductivity Temperature Orthophosphate Silica	Chlorine Chloramines Chlorine Dioxide Total Trihalomethanes (TTHM) Haloacetic Acids (HAA5) Bromate Chlorite Total Organic Carbons (TOC) Alkalinity
2. Surface Water Treatment Group in Rules 611a, 611b and 720		
Turbidity at individual filters Turbidity at filter confluence Chlorine residual at entry point "C*T" Calculation		
5. Chemical / Radionuclide Group		
Radionuclides in Rule 603	Synthetic Organic Chemicals (SOC) in Rule 604d	(SOCs continued)
Gross alpha Radium-226 Radium-228 Gross beta Tritium Strontium-90 Uranium	<u>Carbamates</u> Aldicarb Aldicarb sulfoxide Aldicarb sulfone Carbofuran Oxamyl (vydate)	<u>Dioxin</u> 2,3,7,8-TCDD <u>Expanded SOC</u> Dalapon Dibromochloropropane (DBCP) Diquat Endothall Ethylene dibromide (EDB) Glyphosate
Inorganics in Rule 604c	<u>Pesticides</u> Alachlor Atrazine Chlordane Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Polychlorinated biphenols Simazine Toxaphene	Volatile Organic Chemicals (VOC) in Rule 604b
<u>Partial Chemistry</u> Fluoride Nitrate Nitrite Total nitrate & nitrite Sodium in Rule 717b	<u>Herbicides</u> Dinoseb Pentachlorophenol Picloram 2,4-D 2,4,5-TP silvex	Benzene Carbon tetrachloride o-dichlorobenzene Para-dichlorobenzene 1,2-dichloroethane 1,1-dichloroethylene Cis-1,2-dichloroethylene Trans-1,2-dichloroethylene Dichloromethane 1,2-dichloropropane Ethylbenzene Monochlorobenzene Styrene Tetrachloroethylene Toluene 1,2,4-trichlorobenzene 1,1,1-trichloroethane 1,1,2-trichloroethane Trichloroethylene Xylenes (total) Vinyl chloride
<u>Metals</u> Antimony Arsenic Asbestos Barium Beryllium Cadmium Chromium Cyanide Mercury Nickel Selenium Thallium	<u>Polynuclear Aromatics</u> Benzo(a)pyrene Di(2-ethylhexyl)adipate Di(2-ethylhexyl)phthalate	

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: July 1, 1999 Revised Date: June 15, 2000 Reformatted Date: January 24, 2013	Subject: Administrative Fines – Violation of State Drinking Water Standards		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
	Number: ODWMA-399-012	Page: 1 of 5	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

Drinking water standards are established for public water supplies under the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). Administrative fines are established under amendments to Act 399 (1998 PA 56) for those water supplies that fail to meet state drinking water standards. These fines are to be used as a tool for the DEQ and their authorized agents to promote compliance and meet regulatory requirements.

Exposure to drinking water that exceeds a state drinking water standard puts the public health at risk. Suppliers of water to the public are responsible to comply with regulations to construct, operate, and maintain drinking water systems in a manner that prevents violations of drinking water standards and to take immediate action to protect public health, issue public notice (PN), investigate, and resolve such violations if they occur.

The exceedance of a state drinking water standard can occur even though the water supplier has complied with regulations, procedures, and good practices; and a violation can continue even though the supplier follows all DEQ rules and recommendations to find and correct the problem. In such cases, administrative fines are normally not appropriate. However, suppliers of water that fail to exercise due diligence to prevent, report, or resolve a violation of state drinking water standards or fail to issue PN of the violation of state drinking water standards are subject to administrative fines in accordance with this policy.

This policy replaces Drinking Water and Radiological Protection Division policy DWRP-03-012, Administrative Fines – Violation of State Drinking Water Standards, dated July 1, 1999, Revision #1 dated June 15, 2000.

AUTHORITY:

Safe Drinking Water Act, 1976 PA 399, as amended

DEFINITIONS:

"Contributory category fine" – an administrative penalty issued for failure to comply with a regulation, policy, or procedure resulting in a condition that could have caused or contributed to

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the violation of a state drinking water standard or increased public exposure to water exceeding a state drinking water standard.

"Negligent category fine" – an administrative penalty for each day the supplier of water fails to comply with a DEQ directive, compliance schedule, consent agreement, or order; fails to issue PN; or fails to minimize public exposure associated with violation of a state drinking water standard.

"State drinking water standard" – quality standards setting limits for contaminant levels or establishing treatment techniques to meet standards necessary to protect public health.

"Tier 1 PN" – a notice informing the public of a violation of a drinking water standard with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the DEQ.

"Tier 2 PN" – a notice informing the public of a violation of a drinking water standard, except where a Tier 1 PN is required.

POLICY:

1. Contributory Category Fines

Issue a contributory category fine to a water supply when the DEQ determines the supply's action or inaction may have:

- a. Contributed to a violation of a state drinking water standard; or
- b. Increased exposure to water exceeding a state drinking water standard.

Examples of actions or inactions that warrant contributory category fines are:

- a. Putting a public water system into service without DEQ approval.
- b. Failure to properly disinfect.
- c. Constructing or altering a water system in violation of Act 399.
- d. Failure to operate and maintain a well, distribution system, or treatment system in accordance with Act 399.
- e. Failure to maintain optimal corrosion control treatment that results in exceedance of a lead or copper action level.

Calculate the contributory category fine, not on a per day basis, but rather per violation of a drinking water standard where there are contributory actions or inactions. Increase the fine amount based on the number of contributory actions or inactions.

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For contributory category fines, the fine amounts are based on the following table:

Contributory Category Fines	For supplies serving...	
	Not more than 10,000 people	10,000 or more people
a. A minimum contributory fine applies when there is a single action or inaction that contributed to the violation. The minimum fine is...	\$400.00	\$1,000.00
b. For each additional action or inaction that may have contributed to the violation, an additional fine may be added to the minimum fine. This additional fine is...	\$200.00	\$400.00
c. The maximum fine per drinking water standard violation is...	\$1,000.00	\$2,000.00

2. Negligent Category Fines

Issue a negligent category of a fine to a water supply after a violation of a state drinking water standard has been identified and the water supply has failed to comply with any of the following to minimize public exposure associated with exceedance of a state drinking water standard

- a. A DEQ directive
- b. Compliance schedule
- c. Consent agreement
- d. PN requirements
- e. Order

Examples of scenarios that warrant negligent category fines are:

- a. A water supply that was required to replace a defective vent on its elevated tank by a specific date and fails to comply with the compliance schedule; subsequently, a bird entered the vent causing a violation of the drinking water standard for coliform bacteria.
- b. A water supply with a maximum contaminant level violation for coliform bacteria was ordered to flush the water system and chlorinate and failed to comply with that requirement.
- c. A water supply exceeds turbidity limits after missing a deadline to complete specific improvements that would have eliminated or minimized this turbidity excursion.
- d. A water supply that exceeds drinking water standards and fails to comply with public notice requirements after being notified of the requirement.

Violations and situations that require a Tier 2 PN represent a less imminent health threat than those that require a Tier 1 PN. Therefore, the negligent category fines are less severe for failure to issue a Tier 2 PN.

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A negligent category fine is calculated on a per day basis according to the following table:

Negligent Category Fines	For supplies serving...	
	Not more than 10,000 people	10,000 or more people
a. The fine per day per violation is...	\$1,000.00	\$2,000.00
b. The total per violation amount may not exceed ...	\$2,000.00	\$10,000.00
c. The fine per day per Tier 2 PN violation is ...	\$400.00	\$1,000.00
d. The total per Tier 2 PN violation amount may not exceed ...	\$800.00	\$5,000.00

3. Disputed Fines

When administrative fines are assessed but disputed by the water supply, give the water supply an opportunity to resolve the dispute. If the case is not resolved through informal means, the ODWMA or local health department (LHD) or its authorized agent will schedule a hearing to resolve the case as outlined in the Administrative Procedures Act, 1969 PA 306, as amended.

4. Ongoing Violations of Drinking Water Standards

The ODWMA or LHD should pursue enforcement actions against a water supply or reassess the source of supply or treatment required if the supply repeatedly violates drinking water standards or associated public notification requirements.

5. Voiding a Fine:

A fine may be voided before or after a requested hearing, with supporting documentation, if the fine is found to have been issued based on incorrect information or no violation of a state drinking water standard has occurred. Other compelling reasons or extenuating circumstances beyond the reasonable control of the water supply requires the approval of either the Field Operations Section Chief for Community Water Supply (CWS) or the Environmental Health Section Chief in consultation with the appropriate LHD Environmental Health Director for noncommunity water supply (NCWS).

PROCEDURES:

WHO	DOES WHAT
ODWMA staff for CWS, or the LHD staff for the NCWS	Determines violation has occurred. For CWS violations, ODWMA staff forward the request for fine to the Lansing Central Office CWS program staff for approval. Lansing Central Office CWS program staff approves and sends to the Administration Section for invoice. For NCWS, LHD forwards citation including fine to supply. Forwards copy to Administration Section. Recommends voiding a fine requiring supervisor approval.

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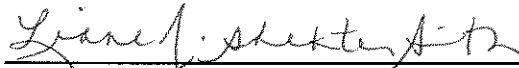
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WHO	DOES WHAT
Administration Section	For CWS, creates the invoice for the administrative fine and mails it to the water supply. For NCWS, creates file in anticipation of payment of fine.
Field Operations Section Chief for CWS or Environmental Health Section Chief in consultation with the LHD Environmental Health Director for NCWS	Review and approve voiding a fine.
ODWMA employee for CWS program, or the LHD staff for the NCWS Program	Resolves issues if supply believes the fine is in error or should not be issued. Holds an informal meeting among affected staff, the supply and a reviewing officer to provide an opportunity for the supply to show compliance.
Reviewing Officer	Hears both positions presented at the informal meeting. Writes memo to ODWMA Chief with recommendations. Drafts letter for ODWMA Chief's signature to the supply with findings.

REFERENCES:

Act 399, Section 7 being MCL 325.1007.

OFFICE CHIEF APPROVAL:

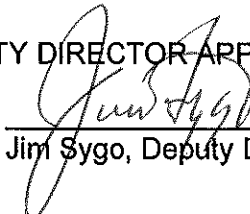


Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

1/18/2013

Date

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

1/24/2013

Date

	DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: January 25, 2017 Revised Date: Reformatted Date:	Subject: Escalated Enforcement Action		Category: ☒ Internal/Administrative ☐ External/Non-Interpretive ☐ External/Interpretive Type: ☐ Policy ☐ Procedure ☒ Policy and Procedure
	Program Name: Drinking Water and Environmental Health		
	Number: DWMAD-399-029	Page: 1 of 4	

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INTRODUCTION, PURPOSE, OR ISSUE:

The purpose of this policy is to establish a procedure within the Drinking Water and Municipal Assistance Division (DWMAD) for identifying and escalating cases of noncompliance for an enforcement response. Consistent use of this procedure by all DWMAD staff will provide:

- better enforcement consistency among the Lansing Central and district offices;
- timely and appropriate enforcement action;
- better communication to staff on case status; and
- a mechanism that allows for better tracking of all DWMAD escalated enforcement cases.

This procedure expands on Section 2: Compliance and Enforcement Process of the DEQ's Compliance and Enforcement Policy and Procedure Number 04-003, which all DEQ staff are expected to follow.

AUTHORITY:

Michigan's Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 *et seq.*; the Public Health Code, 1978 PA 368, as amended, MCL 333.1101 *et seq.*; and the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, authorize the DEQ to compel compliance and resolve violations of these statutes and their administrative rules through various means, including:

- entry and inspection rights;
- assessment of fines and/or penalties;
- denial or rescission of a license or registration;
- issuance of a unilateral order;
- entry of a negotiated Consent Order or Consent Agreement;
- referral to the Department of Attorney General (DAG) for civil litigation; or
- referral to the Department of Natural Resources (DNR), Law Enforcement Division (LED), Environmental Investigations Section (EIS), for criminal investigation.

In addition to these laws and rules, the DEQ and, for Michigan's approved Public Water System Supervision Program, the United States Environmental Protection Agency (USEPA) has established policies and procedures regarding compliance and enforcement.

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POLICY:

All DWMAD staff shall use this procedure for all current and future enforcement cases. This procedure shall be used to implement the applicable enforcement response policy. In instances where DWMAD staff is denied entry to, or the right to inspect, property or records, this procedure shall be followed.

PROCEDURES:

Step	Who	Does What
1.	Any DWMAD district or Lansing Central office program staff (Referring Staff)	Discusses a case of noncompliance that is being considered for an escalated enforcement action with immediate supervisor and section manager, requesting case be put on the agenda for enforcement discussion occurring during field portion of monthly DWMAD management meetings or a meeting or conference call be scheduled to discuss with Enforcement Specialist. The Referring Staff shall provide any Compliance Communications, Violation Notices, Significant Deficiency Violation Notices, and other pertinent supporting documentation (including any response by the party being considered for escalated enforcement) so the documentation can be reviewed prior to the meeting.
2.	District Supervisor, Unit Supervisor or Section Manager	Schedules a meeting or conference call with the Enforcement Specialist, referring staff, and Assistant Division Director or puts discussion of the case on the agenda of the field portion of the next DWMAD Management meeting, forwarding any Compliance Communications, Violation Notices, Significant Deficiency Violation Notices, and other pertinent supporting documentation (including any response by the party being considered for escalated enforcement).
3.	District Supervisor, Unit Supervisor, Section Manager, Enforcement Specialist, Referring Staff	During the meeting after discussing the facts of the case, make a recommendation on how to proceed. For cases of anticipated controversy or high public interest, the Assistant Division Director and Division Director will be briefed on the facts of the case and included in the decision on how to proceed. Generally, the recommendation will be one of the following actions:
a.		Enter into an Abbreviated Administrative Consent Order (AACO), also known as a District-initiated Administrative Consent Order (DACO). The Referring Staff will take the lead in preparing the proposed AACO and negotiating the settlement, with assistance from the Enforcement Specialist when needed.
b.		Prepare and send a referral package for escalated enforcement to the Enforcement Specialist for issuance of an Enforcement Notice and possible entry of an Administrative Consent Order (ACO).

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Step	Who	Does What
		The preparation of the draft proposed ACO, penalty calculation, informal referral to the DAG (for review of ACO), and supporting documents, and the lead during negotiations or other resolution of the violation(s), would primarily be the responsibility of the Enforcement Specialist, with assistance from the Referring Staff when required.
c.		Pursue revocation of a license, registration or certification in accordance with the Administrative Procedures Act, 1969 PA 306, as amended, and other laws pertaining to the case. Generally, this action will be initiated by Lansing Central Office program staff with assistance from the Enforcement Specialist, by scheduling an informal hearing.
d.		Prepare and send a formal referral to the DAG for civil litigation. The preparation of the referral would primarily be the responsibility of the Enforcement Specialist, with assistance from the Referring Staff when required. As the liaison to the DAG, the Chief of the Enforcement Section, Resource Management Group, would participate in the review of the referral prior to the Division Director of the DWMAD signing the referral.
e.		Prepare and send a referral to the USEPA for enforcement by Region 5 staff. Generally, this action will be initiated by the Referring Staff with assistance from the Enforcement Specialist and the concurrence of the EHS Manager.
f.		In instances where DWMAD staff is denied entry to, or the right to inspect property or records, prepare an Affidavit and Application for Administrative Inspection Warrant and an Administrative Inspection Warrant (AIW) for entry to, or inspection of, the property or records for the purpose of carrying out the applicable act and its rules. The Enforcement Specialist would assist the Referring Staff with the preparation of the documents. The DAG and DNR, LED, EIS staff would also assist in the review, execution, and service of these documents. Cases of noncompliance discovered under an AIW shall be handled under this procedure.
g.		Prepare and send a referral to the EIS requesting a criminal investigation, using the Criminal Complaint Investigation Request, Form EQ 9107, when criminal activity is suspected. This form is completed by the Referring Staff, signed by the Referring Staff's immediate supervisor and sent to the EIS Chief with a copy to the Enforcement Specialist.
h.		Recommend that additional information be gathered to strengthen the case before an enforcement action is taken. (For example, a surveillance visit or inspection has not been done recently or

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Step	Who	Does What
		another surveillance visit or inspection may need to be done to ensure that the party's current, comprehensive compliance status is known before an action is commenced.)
i.		Decide not to pursue escalated enforcement against the party at this time. This could be for a number of different reasons including, but not limited to: inadequate resources to escalate the case at the time, lack of sufficient information or evidence to proceed, or the fact that the noncompliant party has returned to compliance since the meeting or conference call was scheduled (and no penalty for past violations is being sought).
4.	Enforcement Specialist or Assistant Division Director	Logs information on enforcement cases into an Excel spreadsheet or other designated spreadsheet or database for tracking purposes and updates the tracking spreadsheet or database prior to the monthly update given at the DWMAD Managers' Meeting (described in Step 5).
5.	Enforcement Specialist or Assistant Division Director	Each month, provides a verbal and written status report on open enforcement cases at the DWMAD Managers' Meeting.

APPENDICES

Compliance and Enforcement Policy and Procedure, DEQ Policy 04-003
Criminal Complaint Investigation Request, Form EQ 9107

DIVISION DIRECTOR APPROVAL:



Bryce Feighner, P.E., Division Director
Drinking Water and Municipal Assistance Division

Chapter 9 Appendices

State and Federal Reporting

Documents	Number of Pages
I01 Violation Follow-up Action and Enforcement Codes.....	1
I09 Example Noncommunity Calendar	1

Violations - Follow-up Actions Coding Short List

SIA Violation Notice or Notice of Noncompliance*

The LHD does any of the following:

- ✓ Alerts the PWS verbally and/or in writing that a MR violation or MCL has occurred.
- ✓ Informs the PWS about required precautionary measures and corrective action (applicable to MCLs only).
- ✓ Provides language for a public notice for posting.

SIE Public Notice Requested*

The LHD mails or delivers the Public Notice to the PWS.

SIF Public Notice Returned*

The PWS owner/operator signs and posts the notice and returns a signed copy to the LHD for the facility file.
Required on MCL violations.

SIC Technical Assistance Visits*

When requested, technical assistance is provided to the owner/operator by the LHD in order to help the supply return to compliance after an MCL violation.

SOX Water Supply Returned to Compliance*

- ✓ A water supply with an outstanding MR violation is now monitoring and reporting in accordance with its established monitoring frequencies. It is vital that all MR violations are SOX'd as soon as possible, to prevent the supply from becoming a targeted system for enforcement under EPA's Enforcement Response Protocol.
- ✓ When subsequent sampling of a water supply with an MCL violation has shown that it is now operating below the MCL and is back in compliance with the DEQ drinking water standard. Use this code when the supply has been taken off precautionary measures.

SFG Public Notice

If a PWS owner/operator refuses to post a notice, or if the threat to public health is great, the sanitarian can issue the public notice, posting it him/herself, and providing the owner with documentation that cites the violation.

SFM Civil/Administrative Penalty (Fine) Issued

A monetary penalty assessed by the LHD in response to a violation of the regulations or a failure to take actions ordered by the primacy agent to achieve compliance.

SO7 Unresolved MCL Violation

Where there is an unresolved MCL in a supply still in operation and further action is expected in order to bring the supply back into compliance. Also used where a seasonal system closes with an MCL (please don't use SO6). It is especially important to include an up-to-date comment with any SO7.

SID Enforcement Site Visit

Site visit to confirm or discover additional violations. Could include collection of chain of custody samples or discussion of potential penalties.

SO6 Intentional No Action

When approval is given to operate a water system where nitrate concentrations persist between 10 and 20 ppm, as per Rule 325.10604c(3). (This code should be used infrequently)

SIB Informal Meeting to discuss violations and compliance

Informational meeting to discuss violations that have occurred and ways of achieving compliance. This meeting may take place at the facility, in the office or on the phone. Not to be confused with an informal meeting to discuss enforcement.

SFJ Formal Notice of Violation

This document is usually issued in conjunction with other formal enforcement activities, such as informal hearings, compliance agreements, etc. The Notice of Violation will cite the violations and may state a time and place in which the informal hearing will take place, as well as the dates by which corrective actions must be taken.

SFK Compliance Agreement Signed

An agreement signed and dated by both the LHD and the water supply that contains a schedule to return the system to compliance.

SO0 No Longer Subject to Rule

Water system changed classification so that a rule for which it was in violation no longer applies under the new classification.

Example Noncommunity Coordinator Calendar: Samples, Reminders, and Violations

Use in Conjunction with:

- Daily, Weekly, Monthly guide
- Sanitary Survey Past Due and To Do lists
- Surveillance Visit lists
- RTCR and other compliance dates

1st Quarter	JANUARY S M T W T F S Semi-Annual, Annual, and Multi-Year Violations Monitoring Frequency Letters	FEBRUARY S M T W T F S	MARCH S M T W T F S Create Seasonal Tracking Spreadsheet Seasonal Monitoring Letters
	APRIL S M T W T F S	MAY S M T W T F S Lead and Copper Reminders Semi-Annual Reminders	JUNE S M T W T F S
	JULY S M T W T F S Semi-Annual Violations Disinfection Byproducts Reminders	AUGUST S M T W T F S Disinfecton Byproducts Due	SEPTEMBER S M T W T F S Lead and Copper Due Seasonal Reminders before Closing
	OCTOBER S M T W T F S Lead and Copper Violations	NOVEMBER S M T W T F S Run Water Sample Status Report before the end of November to avoid December	DECEMBER S M T W T F S Semi-Annual, Annual, and Multi-Year Reminders

During the first month of each quarter

Week	Important Tasks
1	• Request outstanding MORs
2	• Generate, code, and send quarterly violations • Generate, code, and send monthly violations • Complete quarterly report and send to EGLE
3	• Monthly reminders
4	• Run Water Sampling Status Report or Reminder Notices

During the second month of each quarter

Week	Important Tasks
1	• Request outstanding MORs
2	• Generate, code, and send monthly violations
3	• Monthly reminders
4	• Run Water Sampling Status Report or Reminder Notices

During the third month of each quarter

Week	Important Tasks
1	• Request outstanding MORs
2	• Generate, code, and send monthly violations
3	• Monthly and quarterly reminders
4	• Last call for all reminders • Run Water Sampling Status Report or Reminder Notices

Chapter 10 Appendices

Operator Certification

Documents	Number of Pages
J01 Owner and Operator Responsibilities Factsheet	2
J02 First Notice for an S System Letter.....	1
J03 First Notice for a D or F System Letter	1
J04 Second Notice - Increase in Monitoring Letter.....	1
J05 Informal Hearing Letter	1
J07 Community and Noncommunity Water Supply Systems - Required Oversight Policy ODWMA 399-017.....	7
J08 Operator Designation Form.....	1
J09 Interim Certified Operator Letter.....	1

OWNER AND OPERATOR RESPONSIBILITIES FOR NONCOMMUNITY WATER SUPPLIES

Guidance

OVERVIEW

"Supplier of water" or "supplier" is defined as a person who **owns** or **operates** a public water supply. It is the duty of both the owner and operator to make sure the water served to the public follows all of the rules outlined in the Michigan Safe Drinking Water Act, 1976 PA 399, and Administrative Rules, as amended (SDWA).

Supplier Duties:

1. Provide a reasonable supply of safe water to the public.
2. Maintain and operate the system in a safe and clean condition.
3. Collect water samples and report the results to the local health department.
4. Notify consumers of the water in cases of noncompliance.
5. Obtain permits for construction or changes to the water supply.
6. Maintain accurate records.

The SDWA requires certified drinking water operators for **ALL** nontransient noncommunity water supplies. A certified operator is also required at transient supplies that treat the water in order to meet a regulatory standard. Operators are also required at supplies that add chemicals to the water for any reason. Operators must be certified at or above the level of the water system (F, D, or S) classification. Most nontransient supplies will fall into the "lower" S classification. A supplier of water can choose whether they will hire an outside party to serve as their certified operator. Supplies can also have an employee become certified by the State and serve as the drinking water operator.

OPERATOR RESPONSIBILITIES

An operator in charge (OIC) is a properly certified operator who is chosen by the owner of a public water supply as the person in charge of a water system. The OIC makes choices regarding the daily activities of the system that will directly affect the drinking water.

The following criteria have been set to define the minimum acceptable oversight for NCWS's.

D-5 Systems: Under standard operation, an OIC shall be employed by the water supply. While employed they should make **weekly** visits to the water supply and be on call 24 hours per day. They should also supervise and direct staff responsible for daily operations. If a supply has acceptable oversight, site visits may be reduced to two times a month. The health department must approve a reduced schedule for site visits. This approval shall be in writing and reassessed either when the OIC leaves the supply, or if system conditions change.

S-5 Systems: Under standard operation, an OIC shall be employed by the water supply. While employed they should make **monthly** visits to the supply and be on call 24 hours per day. They should also supervise and direct staff responsible for daily operations. If a supply has acceptable oversight, standard site visits may be reduced to once a quarter. This approval shall be in writing and re-assessed either when the OIC leaves the supply, or if system conditions change.

The OIC is more than a person who simply shows up occasionally to collect water samples.

Additional duties of the OIC include, but are not limited to:

1. Keep records and submit reports.
2. Perform precautionary measures and post Public Notices as needed.
3. At least every three months visually check the wellhead, pressure tank, and pumping equipment. Also, visually inspect any treatment equipment. Check the system for leaks or other problems.
4. Treatment operators shall inspect treatment equipment and measure chlorine residuals as directed in the treatment permit.
5. Look for potential cross connections and inspect the cross connection control devices. Make sure that a certified tester inspects the testable backflow devices. Make sure this is done at the time established in the cross connection control program.

OWNER RESPONSIBILITIES

If a system does not have a certified operator, or if the operator's certification expired, the owner will be notified that they are violating the SDWA rules.

The SDWA rules require the supply to have a certified operator at all times. Although the owner of a supply must obtain an operator to follow the rules, the owner is also responsible for complying with the SDWA.

The owner's duties include but are not limited to:

1. Hire or appoint an operator certified with the correct certification in a reasonable time frame.
2. Notify the Local Health Department (LHD) within 7 days when the status of an operator at a supply changes.
3. Notify the LHD of any positive total coliform results within 24 hours or by the end of the next business day.
4. Notify the LHD of any proposed modifications to the drinking water supply system or water well, i.e. new plumbing or pump replacement.
5. Pay any fees or fines authorized by the SDWA.

This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Level 5 Certified Water Operator Program Compliance – First Notice for an S-5 System

Our records currently show that the certified drinking water operator, operator name, and their certification expired on date.

OR... LHD choose one and delete the other one.

Our records currently show that system name does not have a certified drinking water operator.

A Type II nontransient noncommunity (and transient systems that employ certain water treatment processes) system is required by law to have a certified drinking water operator. Failure to do so puts the facility into noncompliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Administrative Rules, specifically R 325.11905; and may result in enforcement actions.

There are two options available if you currently do not have a certified operator. You can:

1. Hire a certified operator with at least an S-5 level certification. If hiring an operator, provide verification of such by date. A list for operators willing to hire out is not maintained by this office, however, some names can be furnished if needed.
2. Apply or select an employee to apply for the next certified operator exam offered on date. An application to sit the exam is available on the Michigan Department of Environment, Great Lakes, and Energy (EGLE) website at <http://www.michigan.gov/egleoperatortraining>. Notify this office by date with EGLE verification of exam application.

Please contact this office by date to confirm/provide information on your facility operator status. Failure to contact this office by the date listed above will result in further enforcement actions which may include increased water quality monitoring.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Level 5 Certified Water Operator Program Compliance – First Notice for a System with Treatment

Dear :

Our records currently show that your certified drinking water operator is operator name, and their certification expired on date.

OR...LHD choose one.

Our records currently show that system name does not have a certified drinking water operator.

A Type II nontransient noncommunity (and transient systems that employ certain water treatment processes) system is required by law to have a certified drinking water operator. Failure to do so puts the facility into noncompliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Administrative Rules, specifically R 325.11905; and may result in enforcement actions.

Your facility currently has a water treatment system that requires a D or F level certified operator, therefore, an appropriately certified operator must be hired immediately to operate the system. A list of certified operators willing to hire out is not maintained by this office, however, some names can be furnished if needed.

Please contact this office by date (not longer than 30 days) to confirm/provide information on your facility operator status. Failure to contact this office by the date listed above will result in further enforcement actions which may include increased water quality monitoring.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Second Violation Notice – Certified Drinking Water Operator Noncompliance

Dear _____ :

This is the second notice of failure to obtain a certified drinking water operator for System Name, a noncommunity public water supply system. On date, this office notified person or water supply name by letter regarding the lack of a certified operator. In the previous correspondence, this office requested a response to confirm and/or provide new information on your drinking water operator status by date.

The deadline has passed and appropriate actions by System Name have not been completed.

A Type II nontransient noncommunity (and transient systems that employ certain water treatment processes) system is required by law to have a Michigan Department of Environment, Great Lakes, and Energy (EGLE) certified drinking water operator. System Name is in noncompliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Administrative Rules, specifically, R 325.11905 and R 325.11906b. R 325.11905, *Certification of Operators*, Rule 1905, states (1) *Any waterworks system or portion of a system which has been classified in accordance with R 325.11901 or R 325.11902 shall be under the supervision of an operator in charge certified in the system of classification as specified in these rules.* R 325.11906b, *Notices to the department*, Rule 1906b, states that: (2) *A public water supply to notify the department within 7 days when the supply no longer has the services of an operator in charge, a shift operator, or a back-up operator.*

There are two options available if you currently do not have a certified operator.

- Hire a certified operator with at least an supply classification level certification. A list for operators willing to hire out is not maintained by this office, however, some names may be available if needed.
- Apply or select an employee to apply for the next certified operator exam offered on date. An application for the exam is available on the [EGLE website](https://www.michigan.gov/egle/0,9429,7-135-3308_3333_4171---,00.html) at https://www.michigan.gov/egle/0,9429,7-135-3308_3333_4171---,00.html

Contact this office by date to confirm/provide information on your facility operator status. Failure to contact this office by the date listed above will result in further enforcement actions which may include escalated enforcement involving EGLE. Be advised that the Department is authorized under Section 21 of Act 399, to pursue fines of up to \$5,000 per day for outstanding violations of Act 399.

Therefore, by no later than date, System Name must obtain a drinking water certified operator with a minimum supply classification classification.

To return to compliance, System Name must provide verification to this office that a certified operator with the appropriate drinking water certification has been obtained.

If you have any questions regarding this Violation Notice, please contact me at email; or phone; or address.

CC: _____, EGLE

ENC: Operator Designation Form

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: INFORMAL HEARING - Level 5 Certified Water Operator Compliance

Date:

Time:

Location:

Dear :

On date this office contacted you by manner of contact regarding the lack of a certified operator for your facility. In that previous contact, this office requested your response to confirm or provide new information on your operator status by date. We have not received any contact from you at this time.

A Type II nontransient noncommunity (and transient systems that employ certain water treatment processes) facility is required by law to have a certified drinking water operator. Failure to do so puts the facility into noncompliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Administrative Rules, specifically R 325.11905 and may result in enforcement actions.

Because of your failure to respond to our previous notice, this office is scheduling an informal hearing to resolve noncompliance with the certified drinking water operator requirement and to complete a Bilateral Compliance Agreement.

You are required to attend the informal hearing scheduled for: details of hearing

Contact this office immediately if you are unable to attend this scheduled hearing. Failure to attend this hearing may result in further enforcement actions.

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: March 4, 2002 Revised Date: August 25, 2014 Reformatted Date:	Subject: Community and Noncommunity Water Supply Systems – Required Operations Oversight Division/Office and Program Names: ODWMA-Public Water System Supervision Program Number: ODWMA-399-017		Category: ☐ Internal/Administrative ☐ External/Non-Interpretive ☒ External/Interpretive Type: ☐ Policy ☐ Procedure ☒ Policy and Procedure
	Page: 1 of 7		

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

The following policy is established to define the minimum oversight acceptable for community and noncommunity water supplies during standard operation and/or when the operator-in-charge leaves.

AUTHORITY:

- Michigan's Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), MCL 325.1009, Section 9, "Classification of water treatment and distribution systems; advisory board of examiners; certificates of competency; supervision of public water supply; certificate renewal; training program for certified operator; fees."
- R 325.11901, R 325.11902, R 325.11905, R 325.11906a, and R 325.11906b of the Administrative Rules adopted pursuant to Act 399 covering the classification of treatment systems, classification of distribution systems, certification of operators, restricted certificates for existing operators, and notices to the DEQ. R 325.11905(3) requires a shift operator be on-site and in charge of each operating shift at a community supply in the F classification when the operator in charge is not on-site. Also, R 325.11905(9) requires water supplies to have in place a plan for proper operation of the waterworks system when the operator in charge is not available.

STAKEHOLDER INVOLVEMENT

No formal stakeholder meeting was conducted, however, stakeholder input was solicited and received prior to approval.

DEFINITIONS:

Community Water Supply (CWS) – A public water supply that provides year-round service to not fewer than 15 living units or which regularly provides year-round service to not fewer than 25 residents. Examples include municipalities, such as cities, villages, and townships; apartment complexes; manufactured housing communities; condominiums; and nursing homes.

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Noncommunity Water Supply (NCWS) - A public water supply that provides service on an average daily basis to 25 or more individuals or 15 or more service connections for not less than 60 days per year, but does not meet the CWS criteria. Examples include schools; day care centers; hotels; and campgrounds.

Operator In Charge (OIC) – A properly certified operator who is designated by the owner of a public water supply as the responsible individual in overall charge of a waterworks system, or portion of a waterworks system, who makes decisions regarding the daily operational activities of the system that will directly impact the quality or quantity of drinking water.

Daily – unless otherwise specified, daily means at least 5 days a week.

POLICY:

The following criteria are established for both standard and interim operation of F, D, and S classified water systems:

F-1, F-2, F-3, F-4, AND F-5 SYSTEMS

STANDARD OPERATION

Under standard operation, an OIC shall be employed by the water supply, make daily visits to the water treatment plant (WTP), be on call 24 hours per day, and supervise/direct staff responsible for daily operations. This includes OIC's that work full time (40+ hours a week) for a single water supply with only one WTP. For systems with certified shift operators, non-traditional work schedules (i.e. four 10-hour days) may be considered acceptable.

For systems with more than one WTP - the OIC shall make daily visits to each WTP, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. For systems with certified shift operators, the requirement to visit each WTP daily may be reduced if there is a plan in place for proper operation of each WTP when the OIC is not on-site. The plan should include the methods of communication, off-site operation capabilities and the expected response time for the OIC to travel to each WTP in emergencies. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

In cases where an operator is providing OIC services either by contract or an operations agreement - the OIC shall make daily visits to each WTP, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. For these situations, daily means at least 5 days a week, 4 hours per visit.

For F-5 WTPs with acceptable oversight and a plan in place for the proper operation of the WTP when the OIC is not available (such as a trained person on site who is capable of performing the daily duties), visit frequency may be reduced to weekly per approval of the DEQ or Local Health Department staff. System performance should be considered

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in the decision to reduce the frequency of visits. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

INTERIM OPERATION

For interim operation when an OIC is no longer available, it is acceptable to provide the supply time to recruit a replacement or promote a staff member to fill the OIC position. During this interim period, the supply must retain a temporary OIC certified at the appropriate level to visit the WTP daily and be responsible for its daily operation. A temporary OIC for an F-5 supply may be allowed to visit the WTP weekly if approved by the DEQ or Local Health Department staff. The following conditions also apply:

1. If the supply desires to promote a staff member to be the OIC after the staff member has achieved proper certification, this individual must first qualify to write the appropriate certification examination when it is next offered. If this individual fails the examination, the supply must immediately pursue the hiring of a full-time OIC.
2. If the supply does not desire to promote a staff member to be the OIC, then it must immediately pursue hiring a full time OIC. The OIC must be on staff within six months.

Interim Operation may only be considered if ALL of the following apply:

1. The OIC leaves abruptly.
2. The supply cannot or does not immediately appoint an OIC.
3. Properly certified shift operators are present (does not apply to F-5 WTPs).

D-1, D-2, AND D-3 SYSTEMS

STANDARD OPERATION

Under standard operation, an OIC shall be employed by the water supply, make daily visits to the WTP, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. If a supply has acceptable oversight and has a plan in place for the proper operation of the waterworks system when the operator in charge is not available (such as a trained person on site who is capable of performing the daily duties), visit frequency may be reduced to twice per week per approval of the DEQ. The visit frequency for D-3 systems with only chlorine or chlorine and phosphate addition may be reduced to once per week per approval of the DEQ. System performance should be considered in the decision to reduce the frequency of visits. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

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INTERIM OPERATION

For interim operation when an OIC is no longer available, it is acceptable to provide the supply time to recruit a replacement or promote a staff member to the OIC position. During this interim period, the supply must retain a temporary OIC certified at the appropriate level to visit the WTP at least once per week, be on call 24 hours per day, and supervise/direct staff responsible for its daily operation. The following conditions also apply:

1. If the supply desires to promote a staff member to be the OIC after the staff member has achieved proper certification, this individual must first qualify to write the appropriate certification examination when it is next offered. If this individual fails the examination, the supply must immediately pursue the hiring of a full-time OIC.
2. If the supply does not desire to promote a staff member to be the OIC, then it must immediately pursue hiring a full-time OIC. The OIC must be on staff within six months.

Interim Operation may only be considered if ALL of the following apply:

1. The OIC leaves abruptly.
2. The supply cannot or does not immediately appoint an OIC.
3. The supply has an operator with acceptable knowledge and experience to conduct daily operations under the supervision of the temporary OIC.

D-4 AND D-5 SYSTEMS

STANDARD OPERATION

Under standard operation, an OIC shall be employed by the water supply, make weekly visits to the WTP, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. If a supply has acceptable oversight and has a plan in place for the proper operation of the waterworks system when the operator in charge is not available (such as a trained person on site who is capable of performing the daily duties), visit frequency may be reduced to twice per month per approval of the DEQ or Local Health Department staff. The standard operation for D-5 systems may be reduced to once per month with the approval of the DEQ or Local Health Department staff. System performance should be considered in the decision to reduce the frequency of visits. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

INTERIM OPERATION – Same as STANDARD OPERATION, above.

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S-1, S-2, AND S-3 SYSTEMS

STANDARD OPERATION

Under standard operation, an OIC shall be employed by the water supply, make daily visits to the supply, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. If a supply has acceptable oversight and has a plan in place for the proper operation of the waterworks system when the operator in charge is not available (such as a trained person on site who is capable of performing the daily duties), visit frequency may be reduced to once per week per approval of the DEQ. System performance should be considered in the decision to reduce the frequency of visits. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

INTERIM OPERATION

For interim operation when an OIC is no longer available, it is acceptable to provide the supply time to recruit a replacement or promote a staff member to the OIC position. During this interim period, the supply must retain a temporary OIC certified at the appropriate level to visit the supply at least once per week, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. The following conditions also apply:

1. If the supply desires to promote a staff member to be the OIC after the staff member has achieved proper certification, this individual must first qualify to write the appropriate certification examination when it is next offered. If this individual fails the examination, the supply must immediately pursue the hiring of a full-time OIC.
2. If the supply does not desire to promote a staff member to be the OIC, then it must immediately pursue hiring a full-time OIC. The OIC must be on staff within six months.

Interim Operation may only be considered if ALL of the following apply:

1. The OIC leaves abruptly.
2. The supply cannot or does not immediately appoint an OIC.
3. The supply has an operator with acceptable knowledge and experience to conduct daily operations under the supervision of the temporary OIC.

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S-4 SYSTEMS

STANDARD OPERATION

Under standard operation, an OIC shall be employed by the water supply, make twice a month visits to the supply, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. If a supply has acceptable oversight and has a plan in place for the proper operation of the waterworks system when the operator in charge is not available (such as a trained person on site who is capable of performing the daily duties), visit frequency may be reduced to once per month per approval of the DEQ. System performance should be considered in the decision to reduce standard operation. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

INTERIM OPERATION – Same as STANDARD OPERATION, above.

S-5 SYSTEMS

Class S-5 systems include CWSs and NCWSs with no treatment and a distribution system limited in extent. The following guidelines shall be used to determine if a distribution system is limited in extent:

1. Any supply with a distribution system comprised solely of building piping.
2. Any supply comprised of an external buried distribution system that does not include water supply appurtenances that require maintenance such as fire hydrants, system valves, blow-off assemblies, etc.

STANDARD OPERATION

Under standard operation, an OIC shall be employed by the water supply, make monthly visits to the supply, be on call 24 hours per day, and supervise/direct staff responsible for daily operations. If a supply has acceptable oversight and has a plan in place for the proper operation of the waterworks system when the operator in charge is not available (such as a trained person on site who is capable of performing the daily duties), visit frequency may be reduced to once per quarter per approval of the DEQ or Local Health Department staff. System performance should be considered in the decision to reduce the frequency of visits. This approval shall be in writing and re-assessed when either the person leaves the supply, or if system conditions require increased operator oversight.

INTERIM OPERATION – Same as STANDARD OPERATION, above.

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VIOLATION OF OPERATOR OVERSIGHT REQUIREMENTS

When DEQ staff determines a water supply does not meet the operator oversight criteria established in the policy, a violation shall be issued and tracked in SDWIS per the following:

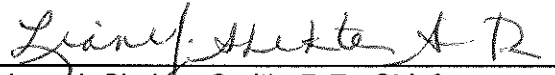
Supplies that Disinfect: The Stage 1 Disinfectants and Disinfection Byproducts Rule requires water supplies that disinfect to have proper certified operator oversight. A supply that fails to do so is in violation of federal requirements and incurs a Tier 2 Treatment Technique violation. For tracking and reporting purposes, the violation shall be entered in SDWIS as a Type 12 violation and will be subject to EPA reporting.

Supplies that DO NOT Disinfect: A supply that does NOT disinfect, is in violation of state operator oversight requirements. Failure to meet these requirements will also be treated as a Tier 2 violation, but is not subject to federal reporting. For tracking purposes, the violation shall be entered in SDWIS as a Type SO violation.

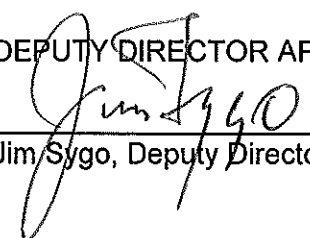
PROCEDURE:

Who	Does What
ODWMA's Drinking Water Program Staff, DEQ Noncommunity Contract Manager and Local Health Department Staff	Incorporates this policy and procedure as part of the review process to determine the adequacy of OIC oversight for a CWS or NCWS. Obtain supervisor approval for oversight reduction requests. This policy and procedure replaces Policy and Procedure ODWMA-399-017, dated January 7, 2013.

OFFICE CHIEF APPROVAL:


Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

DEPUTY DIRECTOR APPROVAL:


Jim Sygo, Deputy Director

Operator and Backup Operator Designation Form

Water Supply Name: _____ WSSN: _____

Water System Classification: _____

Operator in Charge: _____ License(s) Held: _____

Mailing address: _____ Operator ID: _____

City, State, Zip: _____ Phone: _____

Mobile Phone: _____

Email: _____

Signature of Operator: _____ Date: _____

Below Section for LHD Use Only:

Table of Acceptable Certified Operator Visit Frequencies (per EGLE policy)

System Classification	Standard Certified Operator Visit Frequency	Reduced Certified Operator Visit Frequency	Other Requirements
D-5	Weekly	Monthly	OIC on call 24 hours per day, supervise/ direct staff responsible for daily operations. Regular treatment oversight & weekly MOR completion.
S-5	Monthly	Quarterly	OIC on call 24 hours per day, supervise/ direct staff responsible for daily operations.

Approved Certified Operator Visit Frequency

Water Supply System Classification

☐ D-5 ☐ S-5 ☐ Other: _____

Approved OIC Visit Frequency

☐ Standard: _____

☐ Reduced*: _____

Name of trained on-site staff: _____

LHD Visit Frequency Approval

LHD Supervisor Signature: _____ Date: _____

* Reduced visit frequency must be re-assessed when either the trained staff person leaves the supply or if system conditions require increased operator oversight.

Backup Operator Designation Form

I hereby designate the following individual(s) as our backup operator, to be in charge of the portion of the waterworks system identified below when the certified operator-in-charge is not available:

Backup Operator: _____ License(s) Held: _____

Mailing address: _____ Operator ID: _____

City, State, Zip: _____ Phone: _____

Mobile Phone: _____

Email: _____

Signature of Backup Operator: _____ Date: _____

Designated By: _____
(printed name)

Signature: _____ Date: _____

(title)

EXAMPLE LETTER

LHD: Remove or add information as needed

RE: Interim Certified Operator for Facility Name, WSSN

Dear _____ :

In previous communications, this office identified Facility Name did not have a certified drinking water operator or the current operator's certification expired.

A nontransient noncommunity system is required by law to have a certified drinking water operator. Failure to do so places the facility into noncompliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Administrative Rules, specifically R 325.11905, and may result in enforcement actions.

LHD: Remove, modify, or add information specific to the supply as appropriate

One option is to temporarily contract a certified operator until a member of your staff can become certified. This office has not yet received written communication designating a temporary or permanent certified operator.

Find attached a certified operator designation form which must be completed and returned it to this office by date. Include the information for the temporary certified operator if a temporary certified operator has been engaged until a staff member can become certified. Once a member of your staff becomes certified, please inform this office in writing using an Operator Designation form.

Include the WSSN in all communications.

We appreciate your cooperation in resolving this matter. If you have any questions regarding this letter, please contact this office at your earliest convenience.

ENC: Operator Designation Form

Chapter 11 Appendices

Treatment

Documents	Number of Pages
K01 MOR Arsenic Treatment Reverse Osmosis & Cartridge Filter	2
K02 MOR Arsenic Media Adsorption with Chlorine	2
K02.1 MOR Arsenic Media Adsorption without Chlorine	2
K03 MOR Iron or Arsenic Removal Greensand Filter with Chlorine	3
K03.1 MOR Iron or Arsenic Removal Greensand Filter with Potassium Permanganate	2
K04 MOR Arsenic Treatment Ion Exchange	2
K05 MOR Chlorine Injection with or without Phosphate	2
K06 MOR Nitrate Treatment Ion Exchange	2
K07 MOR Nitrate Treatment Reverse Osmosis	2
K08 MOR PFAS Treatment Granular Activated Carbon or Ion Exchange	2
K09 Application to Construct or Improve Treatment Device	5
K10 Arsenic Treatment Follow Up Letter	1
K11 Water Treatment Systems Factsheet	2
K12 SWIFT Treatment Visit Template	2
K13 Disposal of Backwash Water from Arsenic Removal Units Policy ODWMA-399-023	6
K14 Turbidity Requirements and Compliance Determination Policy ODWMA 399-018	8
K15 Regulated Treatment Installation Permit Letter	2
K16 Treatment Installation Approved Letter	2
K17 Unpermitted Treatment Letter	1
K18 Treatment Review and Approval Process	1



**ARSENIC TREATMENT MONTHLY OPERATION REPORT –
REVERSE OSMOSIS & CARTRIDGE FILTER**

Facility Name _____ WSSN _____
Certified Operator _____ # _____ Month/Year _____ / _____
Cartridge Filter Life (gallons treated/month) _____ / _____

Day	Flow Meter Reading (Gallons)	Arsenic Treated (mg/L)	Filter Changes (Y/N)	Visual Inspection (Y/N)	Comments	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
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21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Monthly Average Chlorine Residual					Running Annual Average of last 12 months of Chlorine Residuals	

Operator Signature _____ Date _____

See back for instructions on completing form.
Completion of this form is required by Rule 325.11502, 1976 PA 399.
Submit a copy of this MOR to the Local Health Department within 10 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Reverse Osmosis & Cartridge Filter

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Arsenic Treated: Sample arsenic levels at the faucet where treated water is obtained quarterly and analyze through a certified lab. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. Measure arsenic in treated water monthly using a test kit for operational purposes. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, change the filter(s) and resample or contact your local health department to determine what steps to take to maintain compliance.

Filter Changes: Change the cartridge filter(s) when the shut-off valve shuts off the flow of water or the performance indicating device signals it is time to change the cartridge filter(s), whichever is applicable for your treatment system or every 6 months, whichever comes first. Record a “Y” in the filter change cartridge column and sign for that day. The RO membrane should be changed every 3 – 5 years or if the treated water level of arsenic exceeds 0.010 mg/L or water production from the unit is reduced.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if an arsenic sample is not taken that month.

Arsenic Untreated: Sampling the raw water (untreated) arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the point description “Raw Water” on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section below, so they are not used in determining compliance with the arsenic MCL.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within ten (10) days after the end of the month.



**ARSENIC TREATMENT MONTHLY OPERATION REPORT –
MEDIA ADSORPTION (WITH CHLORINE)**

Facility Name _____ WSSN/Source ID _____

Certified Operator _____ # _____ Month/Year _____ / _____

Chlorine Manufacturer/Trade Name _____ Concentration _____ %

Day	Flow Meter Reading (Gallons)	Arsenic Treated (mg/L)	Free Chlorine Residual (mg/L)	Visual Inspection (Y/N)	Comments (Include date that the raw and treated water were sampled for bacteria)	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
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13						
14						
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27						
28						
29						
30						
31						
Monthly Average Chlorine Residual					Running Annual Average of last 12 months of Chlorine Residuals	

Operator Signature _____ Date _____

See back for instructions on completing form

Completion of this form is required by Rule 325.11502, 1976 PA 399

Submit a copy of this MOR to the Local Health Department within 10 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Media Adsorption (with Chlorine)

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Arsenic Treated: Sample arsenic levels at the “Treated Water” sample tap quarterly and analyze through a certified lab. On the lab slip, state the sampling point is “Treated Water.” Allow water to run from the sample tap for at least 30 seconds before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. Measure arsenic in treated water monthly using a test kit for operational purposes. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance. If you sample the raw water or backwash for arsenic, clearly label the point description “Raw Water” or “Backwash Water” on the lab slip and write the arsenic result, sampling date, and that it is raw water or backwash water in the comment section below, so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water must be used in compliance determinations if the source where the sample is from is not clear and that can cause an MCL violation even though the treated water may meet the arsenic MCL.

Free Chlorine Residual: Analyze the free chlorine residual in treated water at the treated water sample tap with a DPD reagent field test kit at least weekly and record the results. Two field test kits that are approved for use are Hach’s Free and Total Chlorine Test Strips, 0-10 mg/L, which is product # 2745050 at Hach.com or Hach’s Chlorine (Free) Test Kit, Model CN-66F, Color Disc, 0.1-3.5 mg/L which is product # 223102 at Hach.com. Other test kits can also be approved for use. Free chlorine residual should be maintained at about 0.5 – 1.0 mg/L and is required to stay below 4.0 mg/L.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Monthly Average Chlorine Residual: Calculate the average free chlorine residual of the samples collected during the month being reported.

Running Annual Residual Average: Calculate the free chlorine average of the past 12 months averages reported in the MOR.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within ten (10) days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if an arsenic sample is not taken that month.

Arsenic Untreated: Sampling the raw water (untreated) arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the point description “Raw Water” on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section below, so they are not used in determining compliance with the arsenic MCL.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within ten (10) days after the end of the month.

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.



**ARSENIC TREATMENT MONTHLY OPERATION REPORT –
MEDIA ADSORPTION (WITHOUT CHLORINE)**

Facility Name _____ WSSN/Source ID _____
Certified Operator _____ # _____ Month/Year _____ / _____

Day	Flow Meter Reading (Gallons)	Arsenic Treated (mg/L)	Filter Changes (Y/N)	Visual Inspection (Y/N)	Comments	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
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31						

Operator Signature _____ Date _____

See back for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.
Submit a copy of this MOR to the Local Health Department within 30 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Media Adsorption (without Chlorine)

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Arsenic Treated: Sample arsenic levels at the “Treated Water” sample tap quarterly and analyze through a certified lab. On the lab slip, state the sampling point is “Treated Water.” Allow water to run from the sample tap for at least one minute before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. Measure arsenic in treated water monthly using a test kit for operational purposes. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance. If you sample the raw water or backwash for arsenic, clearly label the point description “Raw Water” or “Backwash Water” on the lab slip and write the arsenic result, sampling date, and that it is raw water or backwash water in the comment section below, so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water must be used in compliance determinations if the source where the sample is from is not clear and that can cause an MCL violation even though the treated water may meet the arsenic MCL.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if an arsenic sample is not taken that month.

Arsenic Untreated: Sampling the raw water (untreated) arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the point description “Raw Water” on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section below, so they are not used in determining compliance with the arsenic MCL.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within 30 days after the end of the month.



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

**IRON OR ARSENIC REMOVAL MONTHLY OPERATION REPORT –
GREENSAND FILTER (CHLORINE)**

Facility Name _____ WSSN/Source ID _____

Certified Operator _____ # _____ Month/Year _____ / _____

Chlorine Manufacturer/Trade Name _____ Concentration _____ %

Day	Flow Meter Reading (Gallons)	Iron or Arsenic Treated (mg/L)	Free Chlorine Residual (mg/L)	Visual Inspection (Y/N)	Comments (Include date that the raw and treated water were sampled for bacteria)	Analyzed/ Inspected By
1						
2						
3						
4						
5						
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27						
28						
29						
30						
31						
Monthly Average Chlorine Residual					Running Annual Average of last 12 months of Chlorine Residuals	

Operator Signature _____ Date _____

See next page for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.

Submit a copy of this MOR to the Local Health Department within 10 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Media Adsorption (with Chlorination)

Flow Meter Reading: Record flow meter reading at beginning and end of month. If reading flow from multiple flow meters or valve units, add the readings together and record the total. If the flow meter is automatically reset after backwash, record readings daily.

Iron Treated: (if applicable) Sample iron levels in the treated water is not required, however, the certified operator may want to periodically sample treated water iron levels to document historical treatment effectiveness. A field test kit or certified lab could be used to analyze iron level in the sample. This column is provided to record iron results if they are obtained.

ARSENIC SAMPLING (if applicable)

Treated Water: Sample arsenic levels quarterly at the “Treated Water” sample tap directly after treatment and analyze through a certified lab. On the lab slip, state the sampling point is “Treated Water.” Allow water to run from the sample tap for at least 30 seconds before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance.

Untreated Water: Sampling the raw (untreated) water arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the sampling point “Raw Water” on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section of this MOR form, so they are not used in determining compliance with the arsenic MCL.

Backwash Wastewater: If you sample the backwash wastewater for arsenic, clearly label the sampling point “Backwash Wastewater” on the lab slip and write the arsenic result, sampling date, and that it is backwash wastewater in the comment section of this MOR, so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water or backwash wastewater must be used in compliance determination if the location where the sample is from is not clear and that can cause an MCL violation even though the treated water may meet the arsenic MCL. Please do not use your WSSN on a lab slip for any backwash samples since these are wastewater samples not drinking water samples.

Free Chlorine Residual: Analyze the free chlorine residual in treated water at the treatment system with a DPD reagent field test kit at least weekly and record the results. Two field test kits that are approved for use are Hach’s Free and Total Chlorine Test Strips, 0-10 mg/L, which is product # 2745050 at Hach.com or Hach’s Chlorine (Free) Test Kit, Model CN-66F, Color Disc, 0.1-3.5 mg/L which is product # 223102 at Hach.com. Other test kits can also be approved for use. Free chlorine residual should be maintained at about 0.5 – 1.0 mg/L and is required to stay below 4.0 mg/L.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the Analyzed/Inspected By column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/Inspected By: Person obtaining sample, analyzing free chlorine residual in treated water, or inspecting system signs on that day. Signatures are not needed on days an inspection or sample has not occurred.

Monthly Average Chlorine Residual: Calculate the average free chlorine residual of the samples collected during the month being reported.

Running Annual Residual Average: Calculate the free chlorine average of the past 12 months averages reported in the MOR.

Operator signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within ten (10) days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation.

Note: Disinfection byproduct sampling is required at nontransient noncommunity public water supplies that inject chlorine. Follow directions from your local health department. This disinfection byproduct sampling is typically done once a year in



August and may be reduced to once every three (3) years based on initial sample results. Also, every time a public water supply that injects chlorine takes a total coliform bacteria sample in the distribution system, they must also sample and record the free chlorine residual at the same location and time and also sample and analyze a raw water total coliform sample at the same time.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within ten (10) days after the end of the month.



IRON OR ARSENIC REMOVAL MONTHLY OPERATION REPORT – GREENSAND FILTER (POTASSIUM PERMANGANATE)

Facility Name _____ WSSN _____

Certified Operator _____ # _____ Month/Year _____ / _____

Permanganate Manufacturer/Trade Name _____ Concentration _____ %

Day	Flow Meter Reading (Gallons)	Iron or Arsenic Treated (mg/L)	Check Permanganate Injection System (mg/L)	Visual Inspection (Y/N)	Comments	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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30						
31						

Operator Signature _____ Date _____

See next page for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.

Submit a copy of this MOR to the Local Health Department within 10 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Greensand with Permanganate

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Iron Treated: (if applicable) Sample iron levels in the treated water is not required, however, the certified operator may want to periodically sample treated water iron levels to document historical treatment effectiveness. A field test kit or certified lab could be used to analyze iron level in the sample. This column is provided to record iron results if they are obtained.

ARSENIC SAMPLING (if applicable)

Treated Water: Sample arsenic levels quarterly at the “Treated Water” sample tap directly after treatment and analyze through a certified lab. On the lab slip, state the sampling point is “Treated Water.” Allow water to run from the sample tap for at least 30 seconds before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance.

Untreated Water: Sampling the raw (untreated) water arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the sampling point “Raw Water” on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section of this MOR form, so they are not used in determining compliance with the arsenic MCL.

Backwash Wastewater: If you sample the backwash wastewater for arsenic for any purpose, clearly label the sampling point “Backwash Wastewater” on the lab slip and write the arsenic result, sampling date, and that it is backwash wastewater in the comment section of this MOR, so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water or backwash wastewater must be used in compliance determination if the location where the sample is from is not clear and that can cause an MCL violation even though the treated water may meet the arsenic MCL. Please do not use your WSSN on a lab slip for any backwash samples since these are wastewater samples not drinking water samples.

Check Potassium Permanganate Injection System: Visually inspect the potassium permanganate injection system weekly. Add potassium permanganate to the storage tank if needed and inspect for leaks. Mark a “Y” in this column every day the injection system is inspected and sign your name in the Analyzed by column for that day. Note: potassium permanganate injected into this water supply must have the NSF 60 certification.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/Inspected By: Person obtaining sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. **Submittal of an MOR is required for every month the treatment system is in operation.**

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within ten (10) days after the end of the month.

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

ARSENIC TREATMENT MONTHLY OPERATION REPORT

Facility Name _____ WSSN/Source ID _____
Certified Operator _____ # _____ Month/Year _____ / _____

Day	Flow Meter Reading (Gallons)	Arsenic Treated (mg/L)	Visual Inspection (Y/N)	Comments	Analyzed/ Inspected By
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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26					
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28					
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30					
31					

Operator Signature _____ Date _____

See back for instructions on completing form

Completion of this form is required by Rule 325.11502, 1976 PA 399
Submit a copy of this MOR to the Local Health Department within 30 days after the end of the month.

Instructions for Completion of Monthly Operation Report

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Arsenic Treated: Sample arsenic levels at the “Entry Point to Distribution System” (EPTDS) sample tap quarterly and analyze through a certified lab. On the lab slip, state the sampling point is “EPTDS” or “Treated Water.” Allow water to run from the sample tap for at least 30 seconds before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. Measure arsenic in treated water monthly using a test kit for operational purposes. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance. If you sample the raw water or backwash for arsenic, clearly label the point description “Raw Water” or “Backwash Water” on the lab slip and write the arsenic result and that it is raw water or backwash water in the comment section below, so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water must be used in compliance determinations if the source is not clear where the sample is from and that can cause an MCL violation even though the treated water may meet the arsenic MCL.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/ Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if an arsenic sample is not taken that month.

Arsenic Untreated: Sampling the raw water (untreated) arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the point description “Raw Water” on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section below, so they are not used in determining compliance with the arsenic MCL.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within 30 days after the end of the month.



**MONTHLY OPERATION REPORT –
CHLORINE INJECTION WITH OR WITHOUT PHOSPHATE**

Facility Name _____ WSSN/Source ID _____

Certified Operator _____ # _____ Month/Year _____ / _____

Chlorine Manufacturer/Trade Name _____ Concentration _____ %

Phosphate Manufacturer/Trade Name _____ Concentration _____ %

Day	Flow Meter Reading (Gallons)	Free Chlorine Residual (mg/L)	Ortho- Phosphate Residual (mg/L)	Visual Inspection (Y/N)	Comments (Include date that the raw and treated water were sampled for bacteria)	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
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18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Monthly Average Chlorine Residual					Running Annual Average of last 12 months of Chlorine Residuals	

Operator Signature _____ Date _____

See back for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.

Submit a copy of this MOR to the Local Health Department within 10 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Chlorine Injection with or without Phosphate

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Free Chlorine Residual: Analyze the free chlorine residual at the treated water sample tap with a DPD reagent field test kit at least weekly and record the results. Two field test kits that are approved for use are Hach's Free and Total Chlorine Test Strips, 0-10 mg/L, which is product # 2745050 at Hach.com or Hach's Chlorine (Free) Test Kit, Model CN-66F, Color Disc, 0.1-3.5 mg/L which is product # 223102 at Hach.com. Other test kits can also be approved for use. Free chlorine residual should be maintained at about 0.5 – 1.0 mg/L and is required to stay below 4.0 mg/L.

Orthophosphate Residual: Analyze the orthophosphate (PO₄) residual at the treated water sample tap. The testing kit or device must use a testing method which has been approved by the EPA. If a device reports the residual "As Phosphorous" or "As P" or "PO₄-P", then this value should be multiplied by 3.06 to give the correct value as orthophosphate.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a "Y" in this column every day the treatment system is inspected and sign your name in the "Inspected By" column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Monthly Average Chlorine Residual: Calculate the average free chlorine residual of the samples collected during the month being reported.

Running Annual Residual Average: Calculate the free chlorine average of the past 12 months averages reported in the MOR.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within ten (10) days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation.

Note: Disinfection byproduct sampling is required at public water supplies that inject chlorine. Follow directions from your local health department. This disinfection byproduct sampling is typically done once a year in August and may be reduced to once every 3 years based on initial sample results. Also, every time a public water supply that injects chlorine takes a total coliform sample in the distribution system, they must also sample and record the free chlorine residual at the same location and time and also sample and analyze a raw water total coliform sample at the same time.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within ten (10) days after the end of the month.



**NITRATE TREATMENT MONTHLY OPERATION REPORT –
ION EXCHANGE**

Facility Name _____ WSSN _____
Certified Operator _____ # _____ Month/Year _____ / _____

Day	Flow Meter Reading (Gallons)	Nitrate Treated (mg/L)	Salt Added (mg/L)	Visual Inspection (Y/N)	Comments	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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26						
27						
28						
29						
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31						

Operator Signature _____ Date _____

See next page for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.
Submit a copy of this MOR to the Local Health Department within 30 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Water Softener

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Nitrate Treated: Sample nitrate levels at the treated water sample tap quarterly and analyze through a certified lab. After getting the nitrate sample result from the lab, write the result in this column for the day that it was obtained. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/L which is 10 parts per million. If the lab results are higher than 10 mg/L, add salt to the brine tank, start a regeneration cycle, and resample or contact your local health department to determine what steps to take to maintain compliance.

Salt Added: Add salt to the brine tank when salt levels become low. Record a “Y” in the salt added column and sign for that day.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if a nitrate sample is not taken that month.

Nitrate Untreated: Sampling the raw water (untreated) nitrate levels once a year. Sampling the raw water (untreated) nitrite levels once every 3 years. Clearly label the point description “Raw Water” on the lab slip and write the sampling date, nitrate, or nitrite result, and that it is raw water in the comment section below, so they are not used in determining compliance with the nitrate MCL.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within 30 days after the end of the month.



**NITRATE TREATMENT MONTHLY OPERATION REPORT –
REVERSE OSMOSIS**

Facility Name _____ WSSN _____
Certified Operator _____ # _____ Month/Year _____ / _____

Day	Flow Meter Reading (Gallons)	Nitrate Treated (mg/L)	Filter Changes (Y/N)	Visual Inspection (Y/N)	Comments	Analyzed/ Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
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28						
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30						
31						

Operator Signature _____ Date _____

See back for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.
Submit a copy of this MOR to the Local Health Department within 10 days after the end of the month.

Instructions for Completion of Monthly Operation Report: Reverse Osmosis Nitrate

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Nitrate Treated: Sample nitrate levels at the faucet where treated water is obtained **quarterly** and analyze through a certified lab. After getting the nitrate sample result from the lab, write the result in this column for the day that it was obtained. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/L which is 10 parts per million. If the lab results are higher than 10 mg/L, change the filter(s) and resample or contact your local health department to determine what steps to take to maintain compliance.

Filter Changes: Change the cartridge filter(s) when the shut-off valve shuts off the flow of water or the performance indicating device signals it is time to change the cartridge filter(s), whichever is applicable for your treatment system or every six (6) months, whichever comes first. Record a “Y” in the filter change cartridge column and sign for that day. The reverse osmosis membrane should be changed every 3 – 5 years or if the treated water level of nitrate exceeds 10 mg/L or water production from the unit is reduced.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a “Y” in this column every day the treatment system is inspected and sign your name in the “Inspected By” column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Analyzed/Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if a nitrate sample is not taken that month.

LHD Contact Person _____ Phone _____

Nitrate/Nitrite Untreated: Sampling the raw water (untreated) nitrate levels once a year. Sampling the raw water (untreated) nitrite levels once every three (3) years. Clearly label the point description “Raw Water” on the lab slip and write the sampling date, nitrate or nitrite result, and that it is raw water in the comment section below, so they are not used in determining compliance with the nitrate MCL.

Additional Comments _____

Submit a copy of the MOR to the Local Health Department within ten (10) days after the end of the month.



Certified Operator	#	Month/Year	/

[illegible]

PFAS Monitoring Record							
Date	Flow Meter Reading (Gallons)	PFAS Compound	Entry Point Sample (ng/L)	Midpoint Sample (ng/L)	End Point Sample (ng/L)	Comments	Collected By
		PFNA					
		PFOA					
		PFHxA					
		PFOS					
		PFHxS					
		PFBS					
		HPFO-DA					

Operator Signature _____ Date _____

See back for instructions on completing form.

Completion of this form is required by Rule 325.11502, 1976 PA 399.
Submit a copy of this MOR to the Local Health Department within 30 days after the end of the month.

Instructions for Completion of Monthly Operation Report: PFAS GAC or Ion Exchange

General Instructions

Flow Meter Reading: Record a water meter reading each time when conducting a visual inspection or sampling.

Comments: Record comments for each day that the treatment system is inspected or when samples are collected. If the system has pressure gauges, record where on the system the gauge is located as well as the gauge reading and units. Record any filter or media (resin) changes that were done.

Inspected/Collected By: Sign your name for the day that the visual inspection or sample collection was done.

PFAS Monitoring Instructions

Entry Point Sample: Take a water sample at the tap immediately before the lead treatment vessel and analyze through a certified lab. Record the value for each compound in the applicable row in the Entry Point Sample column.

Midpoint Sample: Take a water sample at the tap between the lead and lag vessels and analyze through a certified lab. Record the value for each compound in the applicable row in the Midpoint Sample column.

End Point Sample: Take a water sample at the tap immediately after the lag vessel and analyze through a certified lab. Record the value for each compound in the applicable row in the End Point Sample column.

For repeat or bi-weekly sampling, use the table on page 2 (below) to record results.

Operator Signature

The certified operator signs and dates the bottom of the MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month that the treatment system is in operation.

PFAS Monitoring Record (for repeat or bi-weekly sampling)							
Date	Flow Meter Reading (Gallons)	PFAS Compound	Entry Point Sample (ng/L)	Midpoint Sample (ng/L)	End Point Sample (ng/L)	Comments	Collected By
		PFNA					
		PFOA					
		PFHxA					
		PFOS					
		PFHxS					
		PFBS					
		HPFO-DA					

Submit a copy of the MOR to the Local Health Department within 30 days after the end of the month.



NONCOMMUNITY WATER SUPPLY
APPLICATION TO CONSTRUCT OR IMPROVE TREATMENT DEVICE

Required under authority of Act 1976 PA 399, as amended.

Please Read First

Public water supply treatment is permitted only in cases where an alternative water source is not available. If connecting to an existing public water supply or drilling a new well are available options, one shall be used in place of installing a treatment system.

Distance to and name of nearest community water system: _____

Is connection to community water possible? Yes ☐ No ☐

Is new well with safe water source possible? Yes ☐ No ☐

Comments: _____

Section 1: Establishment Details

Name: _____

Address: _____

County: _____

Township: _____ Section: _____

WSSN: _____ Tax ID: _____

Owner Details

Owner Name: _____

Mailing Address: _____

Email Address: _____

Phone Number: () _____

Treatment System Designer

Professional Engineer: _____ License Number: _____

or Consultant Name: _____

Email Address: _____

Phone Number: () _____

Water Supply Details

Number of Employees: _____

Estimated number of people served each day: _____

Is any portion of the water system not in use for part of the year? ☐ Yes ☐ No

If yes, describe shut down and startup procedures in the operation and maintenance plan.

Manufacturers rated pump capacity in gallons per minute (gpm) (Provide well pump curve): _____

Total dynamic head in current water system in feet: _____

Water supply peak demand in gpm: _____

Section 2: Treatment Design

Contaminant(s) Targeted for Removal

Identify the contaminant(s) below that the system is designed to remove. Record the most recent concentration of the contaminant(s) present in the water supply.

(Specify units: mg/L, ppm, ppb, ppt, etc., and attach supporting lab data.)

Arsenic: _____

Iron: _____

Nitrate: _____

PFAS Analyte(s): _____

Lead or Copper: _____

Other: _____

Treatment Objective

Describe the treatment objective and the components of the treatment system. If the system will inject a chemical, give the intended dosage or residual to be maintained. Provide as much detail as possible, using additional sheets if necessary.

Example: The objective of this treatment is to reduce the risk of metals leaching from internal plumbing especially lead and copper. This application is for the installation of a chemical feed pump to inject phosphate at a rate of 15 gallons per day (gpd) at 100 pounds per square inch (psi). The targeted phosphate level is 3.0-4.0 parts per million (ppm) measured as PO₄. An ANSI/NSF Standard 60 sodium hypochlorite will also be injected (to reduce biological contamination) by using a chemical feed pump rate at 15 gpd at 100 psi to maintain a chlorine residual in the range of 0.5-1.5 ppm. Chemicals used will be measured by a platform scale under the chemical container.

List any other treatments that are currently in operation (such as softening, disinfection, iron removal, etc.).

Current Water Quality Data (Untreated. Report in mg/L unless otherwise noted.)

Water quality data is based on treatment objective. Please provide relevant data for the treatment proposed.

pH: _____

Temperature (°F): _____

Alkalinity: _____

Conductivity (µS/cm): _____

Iron: _____

Chloride: _____

Sulfate: _____

Silica: _____

Calcium: _____

Manganese: _____

Orthophosphate: _____

Other Relevant Contaminants: _____

Design Plans

The application package must include plans, drawings, and/or process flow diagrams showing the arrangement of components and the path of water through the treatment and into the distribution system. The following is a list of items that are considered components of a drinking water treatment system.

Check for the applicable system elements below:

- ✓ Service line, storage tanks, piping, valves, pressure gauges, flow meters, etc.
- ✓ Number and size of treatment vessels
- ✓ Chemical injection location (if applicable)
- ✓ Method of controlling chemical injection or regeneration process (if applicable)
- ✓ Wastewater receiving system
- ✓ Sampling taps (e.g., "Raw Water" and "Treated Water" taps)
- ✓ Make and model of equipment including chemical injection pumps and control valves

Additional design plans are required for treatment systems that generate backwash. Backwash water with contaminant concentrations above acceptable groundwater discharge limits must be discharged to a holding tank that is separate from the septic tank (in situations where sanitary sewer is not available). Proposals for backwash systems must include plans for the design and operation of the holding tank.

Specifications

Manufacturer specification sheets are required to be included as part of the application package for each component of the drinking water treatment system. Check below to confirm this documentation was included:

- ☐ Application package includes the manufacturer's specifications sheet for each component

Fill in all the following general treatment design information (as applicable):

Design flow rate in gpm: _____

Proposed backwash rate in gpm: _____

Proposed frequency of regeneration in gallons: _____

Section 3: Operation and Maintenance

Please check that the application package includes an operation and maintenance manual describing:

- ✓ Routine operation and maintenance activities
- ✓ Seasonal operations, if applicable
- ✓ Troubleshooting guide

Monthly Operation Report

A monthly operation report (MOR) is to be submitted to the Local Health Department by the certified operator. A template may be provided as needed with the issuance of a permit.

Section 4: Compliance Standards

Equipment, materials, and additives in contact with potable water must meet ANSI/NSF Standards. The applicable standards for water treatment systems are NSF Standard 60 for treatment chemicals and NSF Standard 61 for system components. For reverse osmosis systems, NSF Standard 58 applies to treatment units. Other ANSI/NSF standards may also be relevant.

Include the following documentation in the application package, if applicable.

- ☐ ANSI/NSF listing indicating chemicals used in treatment system are certified to NSF Standard 60
- ☐ ANSI/NSF listing indicating components of treatment system are certified to NSF Standards 61/58

Certified Operator

Identify an operator certified at or above the D5 level. An operator is required before final approval can be granted, or the treatment system is put into operation.

Certified Operator Name: _____
 Operator Number: _____ Classification Level: _____
 Email Address: _____
 Phone Number: () _____

Section 5: Owner's Certification

It is expected that the person listed below will either be a legal representative (board president, trustee, etc.) or a private owner of a noncommunity public water supply.

I, _____ (printed name), acting as the **owner/owner's representative** for _____ (printed name of entity owning the water supply) certify the following:

1. I have reviewed this application for water treatment on the noncommunity public water supply listed herein and understand that regulated water treatment is being proposed; and
2. I understand that an EGLE recommendation is not a permit and a permit from the Local Health Department will be required prior to installing this treatment; and
3. I understand that a D5 certified drinking water operator will be required to operate the proposed treatment system.

Signature _____ Date _____ Phone () _____

Submit the permit application package to the Local Health Department. Including: plans, drawings, specifications, operation and maintenance documents, lab data and NSF certifications.

Application Administrative Completeness

Local Health Department staff shall review and verify all applications are administratively complete before forwarding package to EGLE. Any questions should be directed to the EGLE Representative.

By signing below, the Local Health Department staff agrees that to the best of their knowledge, they have reviewed the application and all required attachments for administrative completeness.

The signature from the Local Health Department in this section does not indicate approval of the treatment system, nor that the need for treatment has been fully determined.

Sanitarian Name: _____

Phone: () _____

Email: _____

Signature: _____

Local Health Department to submit completed treatment applications to EGLE.

Upon receipt and review of a submitted application, either department may contact the supply owner, operator, or designer for further information.

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Arsenic Treatment System Follow-up for Water Supply Name, WSSN

Dear _____ :

This letter is intended to follow-up on the sampling, operation, and maintenance of the arsenic treatment system (System) installed at Water Supply Name and to assist in correcting any problems you may be having with the System.

Design of the System for Water Supply Name was approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on _____ and final approval to operate was granted on _____ by _____. The point of entry System uses _____ and is designed to meet a peak demand of _____ gpm.

Water supply owners that use arsenic treatment equipment to maintain compliance with the arsenic Maximum Contaminant Limit (MCL) of 0.010 mg/L (10 parts per billion) must sample the treated water, and operate and maintain the treatment system. The following paragraphs and enclosed documents provide information on sampling, operating and maintaining the System. Compliance with the arsenic MCL is determined by a running annual average of quarterly samples from the last four quarters. If the arsenic running annual average exceeds the MCL, the water supply owner will be required to propose a remedy. Significant modifications to the System require approval by the DEQ and this health department.

(For POE systems) Taking arsenic samples from an improper location or mislabeling the point description on the lab slip may cause compliance issues. All arsenic compliance samples are to be collected directly after arsenic treatment at the "Entry Point to Distribution System." At your water supply, this tap is located _____. Please label this tap, "Entry Point to Distribution System (take arsenic samples here)." On the lab slip for arsenic samples from this location, label the sampling point "entry point" or "Treated Water."

(For POU systems) Taking arsenic samples from an improper location or mislabeling the point description on the lab slip may cause compliance issues. Arsenic compliance samples are to be taken from the treated water faucet (i.e. where treated water is obtained for consumption) or the sample tap if there is one. On the lab slip, label the sampling point "Treated Water Faucet." Since you have more than one Point of Use (POU) System, each treatment system must be named and sampled separately. For instance, a POU System in a break room could be named and labeled "Break Room Arsenic Treatment System" and labeled as such in the point description area of the lab slip. A POU System in the kitchen could be named and labeled "Kitchen Arsenic Treatment System" and labeled as such in the point description area of the lab slip and so on. The water system is in violation of the arsenic Maximum Contaminant Level (MCL) if the running annual average of any of the treatment systems exceeds the arsenic MCL of 0.010 mg/L.

Please label the sample tap where water enters the building from the well before any treatment or chemical injection "Raw Water Sample Tap." Raw water samples are required for some purposes. Please label the sample point for any samples from this sample tap "Raw Water" on the lab slip. **Arsenic sampling is not required at the raw water tap but may be conducted by the water supply for their purposes.** If an arsenic sample from the raw water tap is analyzed at a certified lab and the point description is not clear, it may be used in compliance determination. This may cause a violation of the arsenic MCL even though the treated water may meet the MCL.

A Monthly Operation Report (MOR) form is enclosed for your use. Please use the attached MOR form instead of the form you are currently using. Instructions for completing the MOR are on the back of the MOR form.

Enclosures

cc: District Staff, EGLE
_____, DEQ
_____, Certified Operator

NONCOMMUNITY WATER TREATMENT SYSTEMS

Guidance

REGULATED WATER TREATMENT SYSTEMS

Water treatment systems used to remove substances (such as arsenic or nitrates) exceeding the Maximum Contaminant Level (MCL) are regulated. These are considered “treatment systems for public health purposes.”

Also, any treatment system that injects chemicals into the water is a regulated treatment system.

UNREGULATED WATER TREATMENT SYSTEMS

When **not** used to meet an MCL, softeners, filters, activated carbon, reverse osmosis (RO), ultraviolet (UV) light, and air-injected and intermittent regeneration greensand iron removal filters are not regulated.

REGULATED WATER TREATMENT SYSTEM REQUIREMENTS

All regulated treatment systems require:

1. A construction permit
2. A D-5 or higher-level operator
3. Monthly Operation Reports (MOR) – (See Rule 1304(1) of the Michigan Safe Drinking Water Act – Act 399.)

CONSTRUCTION PERMIT APPLICATION PROCESS

- Water supply owner or treatment installer creates two copies of the application package (application form, plans, specifications, and operation and maintenance manual) and submits to the Local Health Department (LHD).
- Michigan Department of Environment, Great Lakes, and Energy (EGLE) may review the construction permit application in consultation with the LHD and work with the applicant to correct any deficiencies (the LHD can do a concurrent review, if desired).
- After the application package review is completed, EGLE will contact the LHD and issue a construction recommendation letter.
- The LHD will issue a construction permit letter.
- After treatment is installed, the LHD will do a final inspection. EGLE staff may assist on final inspection.
- The LHD issues final approval of the system following disinfection and satisfactory water sample results (two total coliform samples taken 24 hours apart, and one sample that is below the MCL for the contaminant being removed).

MODIFICATION OF EXISTING WATER TREATMENT SYSTEMS

- Significant changes to existing regulated water treatment systems must be reviewed and approved by EGLE.
- Re-bedding existing treatment systems with the same volume and type of media as originally approved by EGLE can be approved by the LHD. The LHD will notify EGLE of re-bedding.
- LHD staff can request copies of EGLE treatment files for regulated treatment systems.

APPROVED/CERTIFIED TREATMENT SYSTEMS

Anything that touches the water must be NSF/ANSI certified. NSF 61 certification is used for treatment system components and media. NSF 60 certification is used for treatment chemical certification. Water treatment units are certified to other standards (RO NSF 58, softeners NSF 44, UV light NSF 55, health effects NSF 53, etc.). These certifications show that the equipment will not leach harmful chemicals into the water and are required for regulated treatment (see Rule 2102(3)). EGLE does not review unregulated water treatment systems.

WHAT IF THE LHD DOESN'T HAVE A PERMIT OR RECORDS FOR AN EXISTING TREATMENT SYSTEM?

The owner shall contact their LHD to discuss the following information:

1. The type of water treatment system (including make/model).
2. The purpose of the system.

When in doubt, take photos, write down the make/model and email the LHD for guidance.

WHO TO CONTACT WITH QUESTIONS

Water supply owners and certified operators should contact their LHD. LHDs should contact their EGLE area representative.

WATER TREATMENT SYSTEMS QUICK REFERENCE GUIDE

Type of Treatment	General Purpose	How it Works	Regulated (Construction permit, certified operator, and monthly operation reports are required.)	Cross Connection Control
Cation Exchange (Softeners)	Removes hardness and iron	The calcium and magnesium ions in the water are replaced with sodium or potassium ions.	No	Air gap on wastewater line
Anion Exchange	Removes nitrate or arsenic	The nitrate or arsenic ions in the water are replaced with chloride ions.	Yes	Air gap on wastewater line
Chlorine Injection	Disinfection or oxidation	Oxidizing agents are used to convert dissolved iron and other ions to a solid form that can be filtered out.	Yes	Air gap on wastewater line
Greensand Iron Removal with Chemical Injection	Removes iron, manganese, arsenic, hydrogen sulfide	Manganese, iron, etc. are oxidized and precipitated by contact with an oxidizing agent and then filtered out with greensand media.	Yes , if continuous regeneration where oxidation chemicals are injected before the filter. No , if intermittent regeneration where the oxidation chemical is used only in the backwash cycle for media regeneration.	Air gap on wastewater line
Greensand Iron Removal with Air Injection	Removes iron, manganese, arsenic, hydrogen sulfide	Manganese, iron, etc. are oxidized and precipitated by air injection and are trapped in the sand and held there.	Yes, if used to reduce an MCL	Air gap on wastewater line

Type of Treatment	General Purpose	How it Works	Regulated (Construction permit, certified operator, and monthly operation reports are required.)	Cross Connection Control
Phosphate or Silicate Injection	Corrosion control	Phosphate and silicate coats piping walls to isolate aggressive water. Chlorine is injected with phosphate to prevent bacterial growth.	Yes	Air gap on wastewater line
Reverse Osmosis (RO)	Removes nitrates, arsenic, calcium, iron, metals, dissolved solids, organics, viruses	Water is pressurized and passed through a semi-permeable membrane.	Yes, if used to reduce an MCL	Air gap on wastewater line
Activated Carbon	Removes odors, taste, chlorine, and organics	Impurities are absorbed as they pass through a carbon cartridge.	Yes, if used to reduce an MCL	NA
Ultraviolet (UV) Light Disinfection	Disinfection	Ultraviolet light disinfects the water or reduces the amount of bacteria present in the water.	No	NA
Cartridge Filters	Removes particulates; taste and odor control	Water is forced through a fiber filter and sediment is trapped in the filter.	No	NA
Calcite Media	pH adjustment for corrosion control of piping and fixtures	Acidic water slowly dissolves the calcium carbonate to raise the pH.	Yes	NA
Ozone	Disinfection or oxidation	Manganese, iron, etc. are oxidized and then removed by post-filtration.	Yes	Air gap on wastewater line

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Today

PWS Name

Attn: Contact FirstName LastName

Address

Address 2

City, State Zip

RE: Treatment Surveillance Report for PWS Name, WSSN PWSID

Dear Contact First Name Contact Last Name:

LHD completed the annual surveillance of one or more regulated treatment systems at PWS Name on Visit Date. During the visit, we identified 0 significant deficiencies and 0 additional observations. Corrections listed on the following pages must be completed by **Compliance Date**.

The installation of a treatment system for the purpose of meeting a public health standard requires ongoing surveillance and monitoring. These responsibilities include the following:

1. The certified operator should visit the supply to inspect the system monthly. Visual checks by qualified on-site personnel must occur and be recorded weekly on the monthly operational report (MOR).
2. The certified operator is required to submit an MOR for treatment to LHD no later than the 10th day of the following month.
3. Monitoring of each treatment system requires routine analysis of the treated water to confirm compliance:
 - a) Describe routine sampling requirements here: For Example: Weekly field arsenic testing is required.
 - b) Quarterly certified lab tests are required.
 - c) Test results must be recorded and submitted on the MOR.
4. An Operation and Maintenance Manual for the treatment system shall remain on site and be available for reference.
5. PWS Name must inform LHD within 7 days of a change in certified drinking water operator.

To avoid interruptions in water treatment that may put consumers' health at risk, it is important to closely monitor the treatment system performance and perform routine maintenance. If your treatment system no longer appears to be operating as designed, contact your system designer, and inform this office.

If you should have any questions on this matter, please contact me at Inspector Phone or Inspector Email.

Sincerely,



Inspector First Name Last Name

LHD

Title

Parties Present During Surveillance Visit

The assistance of water system and treatment system representatives mentioned below was very helpful and greatly appreciated. Each person listed below will receive a copy of this letter.

Name	Organization
Name	Water System

WS operating category Drinking Water Certified Operator Required

This facility is required to have a certified drinking water operator. Records currently show those below as a designated certified operator of this water system.

Name
Name

According to the Act, a public water supply shall notify this office within 7 days when the supply no longer has the services of an operator in charge, or if there is a change in operators.

Water System Treatment

WATERSYSTEM_SUMMARY.TREATMENT

Treatment facilities inspected

Treatment Plant Name	Unit Name	Unit Process Name
TP Name	Unit Name	Unit Process Name
LHD: This table should not be blank.		

Observations

Section	Question which prompted the deficiency	Deficiency Comments & Observations	Corresponding Attachment ID Number
Section	Long Question	Comments	ID
There were no deficiencies identified during this site visit.			

Section	Question which prompted the comment	Other Comments & Observations	Corresponding Attachment ID Number
Section	Long Question	Comments	ID
There were no additional items identified during this site visit.			

Attachments

Attachment ID: ID
Description
End of attachments

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: October 12, 2007 Revised Date: Reformatted Date: January 9, 2013	Subject: Disposal of Backwash Water from Arsenic Removal Units		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
	Number: ODWMA-399-023	Page: 1 of 5	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE:

All community water supplies and nontransient noncommunity water supplies must comply with the arsenic maximum contaminant level (MCL) of 0.010 milligram per liter (mg/L), or 10 parts per billion (ppb). In order to meet the arsenic MCL, many water systems will have to install treatment and most, if not all, arsenic treatment systems have to be periodically backwashed. Disposal options of the backwash water include pumping to an existing sanitary sewer line, surface water discharge, or groundwater discharge.

AUTHORITY:

R 325.10601 and R 325.10604c of the Administrative Rules promulgated under the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), being MCL 325.1001 *et seq.*, covering drinking water standards for specific contaminants, including arsenic and other inorganics, that shall be met by a supplier of water to assure the protection of public health. In addition, Section 325.1004(2) of Act 399 states, "Upon receipt of the plans and specifications for a proposed waterworks system, the department shall evaluate the adequacy of the proposed system to protect the public health by supplying water meeting the state drinking water standards."

Part 21, Part 22, and Part 23 Rules promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451).

STAKEHOLDER INVOLVEMENT:

Stakeholder input was solicited during informal meetings and public hearings held during the rule promulgation processes to adopt the arsenic rule of the National Primary Drinking Water Regulations as required by the Administrative Procedures Act, 1969 PA 306, as amended.

DEFINITIONS:

Community Water Supply (CWS) – A public water supply that provides year-round service to not fewer than 15 living units, or that regularly provides year-round service to not fewer than

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25 residents. Examples include municipalities, such as cities, villages, and townships; apartment complexes; manufactured housing communities; condominiums; and nursing homes. Nontransient Noncommunity Water Supply (NTNCWS) – A noncommunity supply that serves not fewer than 25 of the same individuals on an average daily basis more than six months of the year. Examples include places of employment, schools, and day care centers.

POLICY:

CWS and NTNCWS have several treatment options to remove arsenic from drinking water, including conventional iron removal, modified iron removal, anion exchange and adsorptive medias. Each of these treatment processes will produce an arsenic residual. The amount of residual produced and the concentration of arsenic in the residual will depend upon a variety of factors, including raw water quality, type of treatment, frequency of backwashing or regeneration and chemicals used in the treatment process.

This policy provides a description for ODWMA staff of how to evaluate discharge options for backwash water. Those options include discharge to a municipal sewer, a National Pollutant Discharge Elimination System (NPDES) surface water discharge permit, or a groundwater discharge permit.

Summary of Arsenic Removal Technologies

Conventional and modified iron removal processes - oxidation and filtration are used to remove both iron and arsenic from the water. Oxidation (aeration, chlorine, potassium permanganate) converts iron in the raw water to iron hydroxides. If arsenic is present, the oxidized form, arsenate [As(V)], is adsorbed onto the iron hydroxide precipitates and removed by filtration. The filters are periodically backwashed to remove the iron/arsenic particulates. If arsenic is in the raw water source, the backwash water usually contains arsenic concentrations above background levels.

Adsorption medias - remove arsenic by passing water under pressure through filter beds packed with the media and the As (V) in the raw water is adsorbed onto the media. When all the adsorption sites have been used up or exhausted, the media can be either regenerated or replaced. If any iron/arsenate precipitates are formed, arsenic will be removed by filtration, not adsorption. Since most groundwaters in Michigan contain some levels of iron, many adsorption filters will remove arsenic by both filtration and adsorption. These medias are usually backwashed every 3-5 weeks, not to remove the arsenic that has been adsorbed, but to uncompact the media and to remove any suspended solids that may have accumulated within the filter. The arsenic concentrations in the backwash water are usually at or below background levels, but can be higher if iron/arsenate particulates are present.

Ion exchange - is a physical-chemical process in which ions are exchanged between a solution phase and a solid resin phase. As(V) is removed through the use of anion exchange resin. Once the resin has been used to exhaustion, it can be regenerated on-site with brine. Single pass regeneration usually produces 40–50 bed volumes of brine waste. Due to the large

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volumes of regenerate water and concerns with high chloride and sodium concentrations in the waste stream, discharges to the groundwater from ion-exchange units are not eligible for a groundwater discharge permit exemption.

Arsenic Backwash Disposal Options

Connection to an existing sanitary sewer that flows to a wastewater treatment facility

The primary choice for discharge of water treatment backwash should be into a sanitary sewer system. Discharge to the sanitary sewer should be approved by the local wastewater treatment system owner prior to connection. If the system can handle the arsenic loading and not cause the wastewater treatment facility to violate its NPDES or state permit, no further assessment is necessary. The sanitary sewer must be evaluated to determine if it is able to accept the full flow of the disposal stream. If there is a mass loading concern, it may be necessary to install holding facilities to “bleed” the residual into the system. This may be accomplished by installing a tank or basin to hold at least a full backwash volume and then bleed in at a rate the sewer and waste facility can handle. The waste facility will be handling the same total arsenic loading over a long period as it receives now without any drinking water treatment. It is a mass balance issue that must be addressed through the Industrial Pretreatment Program (IPP), if applicable. Changes to the IPP may take several months to complete. The project construction and IPP changes can be done simultaneously. The water plant will be expected to comply with local requirements when the discharge commences.

Discharge to a surface water

If a sanitary sewer is not available for discharge of the backwash water, the second preferred method for discharge is to a surface water body, which will require an NPDES permit. A general NPDES permit, wastewater discharge from potable water supply will usually provide coverage for this type of discharge. NPDES permits have limitations and requirements, which will be stated on the permit. The limitation for arsenic in NPDES general permit MIG640000 is 680 micrograms per liter (ug/L) as a daily maximum, and 150 ug/L as a monthly average. Information on how to apply for a NPDES permit can be obtained at the DEQ Web site, http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3713-10440--,00.html.

Discharge to groundwater

If neither a sanitary sewer nor surface water body is available for discharge, a groundwater discharge should be considered the method of last resort. Rule 2210 of the Part 22 Rules describes what discharges are allowed without obtaining an individual or general permit. Rule 2210(o) states that the discharge of water treatment filter backwash water is exempt from a groundwater discharge permit if disposal is in accordance with plans and specifications approved by the DEQ under Act 399.

Criteria to qualify for Groundwater Discharge Permit Exemption

Backwash water from iron removal plants has historically been granted an exemption pursuant to Rule 2210(o). If arsenic is in the backwash water from an iron removal or adsorption processes, it will be in the form of iron/arsenate precipitates. The iron/arsenate bond is very

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strong and unless a reducing condition occurs, the arsenic will remain bonded to the iron and should not infiltrate back into the groundwater.

Since arsenic treatment units will be permitted under Act 399, backwash water from these units may qualify for an exemption. To be eligible for an exemption, the ODWMA staff must approve, pursuant to Act 399, documentation provided by the applicant that one of the following conditions will be met:

1. The effluent will meet the residential cleanup standards (10 ppb for arsenic) in Part 201, Environmental Remediation, of Act 451, or background arsenic levels in the receiving groundwater, not the source groundwater, whichever is greater.
2. The seepage bed or infiltration area will remain aerobic due to permeable soils and sufficient surface area, thus precluding infiltration of arsenic into groundwater.

Monitoring well(s) may be required to be installed if it is felt that arsenic could potentially be leaching into the groundwater.

In order to reduce the amount of arsenic going to a seepage bed, an intermediate holding tank can be installed. This will allow the iron/arsenate precipitates to settle in the tank and the decant water can be forwarded to the seepage bed. This arrangement will decrease the amount of arsenic being discharged to the seepage bed, but will require the holding tank to be pumped out by a licensed industrial waste hauler and the settled material to be properly disposed.

If an ODWMA staff evaluation pursuant to Act 399 determines that neither Item No. 1 nor No. 2 can be met, a Groundwater Discharge Permit will be required.

Discharge to on-site wastewater systems

Discharges of water filtration backwash may occur to subsurface septic tank, tile field systems. The volume, frequency and timing of the discharge, and hydraulic impact on the system should be assessed. The ODWMA staff would also have to follow the same evaluation process as described above for the seepage bed option to determine if the discharger qualified for a Part 22 groundwater discharge permit exemption pursuant to Rule 2210(o) or needed an individual Part 22 permit for the backwash water discharged. In order to discharge to a subsurface system, the discharger must install a holding tank dedicated exclusively to filter backwash water.

The Part 22 Rules [R 323.2210(a)] exempt discharges of sanitary sewage that is not mixed with other waste through septic tank/tile field systems, at volumes less than 6,000 gallons per day (gpd). Water filtration backwash water does not meet the Part 22 definition of sanitary wastewater. Mixing the two waste streams in a single septic tank would eliminate the exemption pursuant to Rule 2210(o) for the sanitary wastewater, and a Part 22 permit would be required if the two waste streams are mixed. However, the ODWMA will allow the discharge of the two waste types from separate tanks to the same tile field if the following conditions are met:

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1. The discharger must provide documentation that they have notified the local health department that has jurisdiction for approving their subsurface wastewater disposal system according to the "Michigan Criteria for Subsurface Sewage Disposal."
2. The discharge from the backwash holding tank shall not compromise the capacity of the tile field.
3. Discharge to the tile field from the backwash holding tank should be during off hours, when the likelihood of a sanitary discharge to the tile field is minimal.
4. The total discharge to the shared drain field cannot exceed 6,000 gpd.

PROCEDURES:

WHO	DOES WHAT
District Staff	Incorporates this policy as part of the permit process to construct arsenic treatment systems including the disposal of backwash water from arsenic removal units.
District Staff	Review arsenic backwash water discharge proposals and determine if the method of disposal meets the specific criteria for that method listed within the policy.
District Staff	Inform the District Supervisor of any discharges that require either a groundwater or surface water permit.
District Supervisors	Assist District Staff in all matters pertaining to the disposal of arsenic backwash waters. Contacts applicant in writing, with cc to permit staff, that either a groundwater or surface water permit is required and that they should contact the appropriate permit authority to begin the permit process.

REFERENCES:

Safe Drinking Water Act, 1976 PA 399, as amended, being MCL 325.1001 *et seq.*, and the administrative rules promulgated thereunder, being R 325.10101 *et seq.*

Part 22, Groundwater Quality Rules, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

United States Environmental Protection Agency (2003), *Arsenic Treatment Technology Evaluation Handbook for Small Systems*, EPA 816-R-03-014, July 2003.

OFFICE CHIEF APPROVAL:

Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

Date

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DEPUTY DIRECTOR APPROVAL:

Jim Sygo, Deputy Director

Date

	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: October 2002 Revised Date: Reformatted Date: January 7, 2013	Subject: Turbidity Requirements and Compliance Determination		Category: ☐ Internal/Administrative ☐ External/Noninterpretive ☒ External/Interpretive
	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
	Number: ODWMA-399-018	Page: 1 of 8	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

ISSUE:

This policy establishes the procedure to calculate compliance with the filtered water turbidity performance requirements and clarifies turbidity requirements for individual filters.

The surface water treatment series of rules establishes turbidity requirements for public water supplies using surface water or groundwater under the direct influence of surface water as a source. Compliance is calculated as an average of all filtered water turbidity measurements during the month.

Increased monitoring during periods of low water turbidity lowers the overall percentage of measurements that exceed the turbidity performance requirement, possibly avoiding a violation. Increased monitoring during times of high water turbidity more accurately reflects the seriousness of the event and the effectiveness of the water treatment plant processes.

This policy directs staff to allow increased monitoring and to use normalized data to calculate compliance. This practice prevents increased monitoring from masking a serious situation and also prevents violations when data shows one did not occur.

This policy replaces WD-03-018 Turbidity compliance monitoring and determination of compliance with the turbidity treatment technique standard dated October, 2002.

DEFINITIONS:

Combined Filter Effluent (CFE) – water from all (or several) individual filter effluent lines combined at a location prior to the entry into a reservoir.

Nephelometric Turbidity Unit (NTU) – standard unit of measurement for turbidity.

Subpart H System – means a public water supply using surface water or groundwater under the direct influence of surface water as a source of water. For the purpose of this policy, “water plant(s)” refers to a treatment plant required to meet Subpart H criteria.

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Surface water treatment series of rules – the rules applicable to Subpart H supplies as listed in the Authority section of this policy. The turbidity performance requirements applicable to this policy are:

The turbidity at the CFE shall at no time exceed:

- 1 NTU for conventional, direct, membrane filtration, or softening plants
- 5 NTU for slow sand or diatomaceous earth filtration plants

Not less than 95 percent of measurements each month shall be less than or equal to

- 0.3 NTU for conventional, direct, membrane filtration, or softening plants
- 1 NTU for slow sand or diatomaceous earth filtration plant

Normalized – to cause to conform to a norm or standard.

Time Weighted Average –an averaging technique used to calculate the concentration of a substance when consecutive individual measurements are taken at different durations of time.

AUTHORITY:

R 325.10605, R 325.10611 - 325.10611a, R 325.10720 - R 325.10720a, and R 325.11506 of the Administrative Rules adopted under the Safe Drinking Water Act, 1976 PA 399, as amended, covering turbidity monitoring at Subpart H water treatment plants. These rules were promulgated to adopt revisions to the National Primary Drinking Water Regulations in order to retain primary enforcement authority of the Public Water System Supervision Program.

STAKEHOLDER INVOLVEMENT:

Stakeholder input was solicited during informal meetings and public hearings held during the rule promulgation processes to adopt the surface water treatment series of rules of the National Primary Drinking Water Regulations as required by the Administrative Procedures Act, 1969 PA 306, as amended.

POLICY:

Combined Filter Effluent Point Sampling and Compliance Determination

Monitoring: Water plants are encouraged to measure turbidity at uniform intervals, throughout the entire operating period. During any episode of increased raw, applied, or filtered water turbidities, increased monitoring may be warranted, and these samples should also be collected at uniform time intervals. The filtered water turbidity measurements used for compliance are taken at the CFE point prior to the entry into a reservoir. For plants with multiple CFEs, each confluence point shall be separately monitored at the same uniform intervals. Monthly Operation Reports (MORs) must report each CFE monitoring location separately. Plant tap turbidity measurements are encouraged but will not be used for determining compliance.

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Compliance Calculation: Compliance with the turbidity treatment technique standard will be determined for each CFE using the time weighted average filtered water turbidity values for each four hours or less for which the treatment facility was operating. If a plant is going to use a compliance period of less than four hours, staff should be notified so compliance can be properly calculated. All filtered water turbidity readings taken from each CFE shall be recorded and used in calculating the time weighted average value for each four hours or less of operation. Turbidity readings when the treatment plant is off-line will not be used in determining compliance, or in the calculation of the daily or four-hour compliance period turbidity values. Refer to the example calculations attached in the back of this policy

Readings from continuous recording turbidimeters may substitute for grab sample monitoring of each CFE if the equipment is properly calibrated. If measurements from a continuous recording turbidimeter are used for compliance monitoring, compliance will be based on the time weighted average value for each CFE from all turbidity readings for each four-hour period or less of operation

A supply is in compliance with the turbidity performance requirement if at least 95 percent of all four hours or less normalized reporting periods are less than or equal to 0.3 NTU (1 NTU for slow sand and DE filtration plants). If one or more CFE is out of compliance with the turbidity performance requirement, the supply is out of compliance.

Reporting: Monthly reporting is required on the Monthly Operation Report (MOR) form provided by the ODWMA under R 325.11506.

Supplies report each CFE monitoring location, the daily average turbidity, the daily maximum turbidity, the total number of samples collected, and the total number of samples with a turbidity greater than 0.3 NTU, (1 NTU for slow sand and DE filtration plants). Supplies notify the ODWMA as soon as possible, but within 24 hours after knowing that a single measurement is greater than 1 NTU for conventional, direct, membrane filtration, or softening plants, or greater than 5 NTU for slow sand or diatomaceous earth filtration plants.

Data Review: If a supply requests assistance calculating compliance values or disputes a violation of the treatment technique, review the daily bench sheets (or computer data logs) with all the recorded turbidity readings. Use the individual readings to calculate compliance with the standard. If the results from a continuous recording turbidimeter are used for reporting purposes, arrange to review all records pertaining to the turbidity measurements including information stored on databases.

Individual Filter Sampling and Compliance Determination

Rule Summary: Subpart H supplies using conventional or direct filtration measure turbidity at each filter every 15 minutes when the filter is in service. If a plant has two or fewer filters, data obtained from the CFE point may be used in lieu of individual filter samples. If there is a failure in the continuous monitoring equipment, plants serving a population of 10,000 or greater must conduct grab sampling every four hours, but for no more than 5 working days. Plants serving a population of less than 10,000 people must also conduct grab samples every four hours if the continuous monitoring

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equipment fails, but for no more than 14 working days. Failure to restore continuous monitoring within the above time frames constitutes a treatment technique violation.

To reduce the potential for treatment technique violations, plants are strongly encouraged to have backup equipment and parts readily available. This includes not only having backup turbidimeters, but backup computers, as well. Also, plants are encouraged to backup all turbidity data daily.

Compliance with the turbidity standards is determined at CFE points, not at individual filters. However, individual filters are subject to “performance requirements” triggers as follows:

1. Individual filter effluent greater than 1.0 NTU for two consecutive 15-minute measurements at any time during filter operation.
2. Individual filter effluent greater than 0.5 NTU for two consecutive 15-minute measurements after the first 4 hours of operation. This only applies to plants serving a population of 10,000 or greater. Also, this trigger only applies to the 15-minute readings taken at 4 hours and 4 hours and 15 minutes after the filter has been in operation. Any measurements taken before or after these times are not considered for this trigger.
3. Individual filter effluent greater than 1.0 NTU for two consecutive 15-minute measurements at any time in three consecutive months.
4. Individual filter effluent greater than 2.0 NTU for two consecutive 15-minute measurements at any time in two consecutive months.

If a trigger is exceeded, supplies report monthly the date(s), filter number, and turbidity measurements. Supplies are required to be able to track these numbers over a three-month period and retain all the individual filter turbidity records for three years.

Staff Guidance: For operational purposes, allow supplies to set the individual filter turbidimeters to record the turbidity more frequently than every 15 minutes. Use only the turbidity measurements taken at the 15-minute intervals to determine if a trigger has been exceeded.

PROCEDURES:

WHO	DOES WHAT
District Staff	Incorporate this policy and procedure as part of the MOR review process to determine compliance with Act 399.

OFFICE CHIEF APPROVAL:

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Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

Date

DEPUTY DIRECTOR APPROVAL:

Jim Sygo, Deputy Director

Date

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Example Turbidity Calculations

Example No. 1 - Supply uses a compliance period of four (4) hours for reporting purposes and collects a grab sample or reads the continuous recording turbidimeter at the CFE every four hours (plants operates 24 hours a day).

Time	CFE NTU	Time weighted 4 hr average
12:00 AM	0.13	0.13
4:00 AM	0.05	0.05
8:00 AM	0.07	0.07
12:00 PM	0.18	0.18
4:00 PM	0.11	0.11
8:00 PM	0.09	0.09
new day		

The time weighted average in this case is the actual measurement of the grab sample since there was only one sample collected during each 4-hour period.

Add the six readings from the last column, divide by 6 to get NTU = 0.105, or rounding off = **0.1 NTU**

0.1 NTU is the number to be entered on the MOR for that day.

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Example No. 2 - same as Example No. 1 only the supply collects a grab sample or reads the continuous recording turbidimeter at the CFE every **hour**.

Time	CFE NTU	Time weighted 4 hr average
12:00 AM	0.12	
1:00 AM	0.09	
2:00 AM	0.11	
3:00 AM	0.21	0.13
4:00 AM	0.09	
5:00 AM	0.17	
6:00 AM	0.22	
7:00 AM	0.19	0.17
8:00 AM	0.14	
9:00 AM	0.12	
10:00 AM	0.09	
11:00 AM	0.11	0.11
12:00 PM	0.08	
1:00 PM	0.23	
2:00 PM	0.16	
3:00 PM	0.09	0.14
4:00 PM	0.05	
5:00 PM	0.15	
6:00 PM	0.17	
7:00 PM	0.09	0.11
8:00 PM	0.11	
9:00 PM	0.13	
10:00 PM	0.18	
11:00 PM	0.07	0.12
new day		

The time weighted average in this case is the average of the hourly measurements in each 4-hour compliance period since they were collected at equal time intervals (1 hour).

Add the six readings from the last column, divide by 6 to get NTU = 0.13
or rounding off = **0.1 NTU**

0.1 NTU is the number to be entered on the MOR for that day.

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Example No. 3 - same as Example No. 2 only the supply experiences high raw water turbidities starting around 8:00 am until about noon. During that time, the supply collects extra grab samples from the CFE at unequal time intervals.

Below are the calculations in determining the time weighted average (TWA) during the four-hour period when samples were collected at unequal time frequencies.

$$TWA = (C_1T_1 + C_2T_2 + \dots + C_nT_n)/(T_1+T_2+ \dots +T_n)$$

TWA = time weighted average

C= concentration of substance

T= time between measurements

Time	CFE NTU (C)	Time duration since previous measurement (T=min)	C x T
8:00	0.19	*	*
8:15	0.21	15	3.15
8:45	0.28	30	8.4
9:00	0.31	15	4.65
9:20	0.38	20	7.6
9:40	0.41	20	8.2
10:00	0.34	20	6.8
10:10	0.37	10	3.7
10:30	0.42	20	8.4
11:00	0.31	30	9.3
11:15	0.25	15	3.75
11:30	0.15	15	2.25
11:45	0.05	15	0.75
		total time = 240	total CxT = 66.95

TWA = 66.95/240 = **0.28** NTU. This number will then be placed in the Time weighted 4-hour average column.

The number placed on the MOR would then be the average of the six, Time weighted 4-hour average numbers similar to Example No. 2.

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Permit to Install Regulated Treatment at PWS Name, WSSN

Dear PWS owner:

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD) and the LHD have reviewed a treatment permit application for PWS Name to install a water treatment system for treatment purpose.

The proposed treatment design consists of describe treatment. The treatment will be installed in the following location(s):

Describe where the treatment units will be installed. If they are POU, include details that this is the only approved drinking water location in the system.

The enclosed review letter from EGLE, dated date, includes further specifications for the system(s) to be installed. The treatment system(s) may be installed as to the approved plans and may be placed into service with the following qualifications:

1. All applicable permits and approvals (for example, plumbing, building) must be secured if required.
2. A minimum of two (2) consecutive non-detect coliform samples must be collected at least 24 hours apart. The samples must be collected from the point of entry to distribution or, for point-of-use treatment, from each post treatment tap.
3. A minimum of one regulated contaminant sample must be below the Safe Drinking Water Act's Maximum Contaminant Level of MCL for regulated analyte from each treatment unit. This is a compliance sample and must be analyzed by a certified drinking water laboratory. The sample must be collected from the point of entry to distribution or, for point-of-use treatment, from each post treatment tap.
4. A final inspection of the treatment systems must be conducted by LHD before the system can be approved to serve the public. Please contact me to schedule this inspection.
5. All potential drinking water locations receiving untreated water must be permanently posted. The recommended language is "Do Not Drink, exceeds contaminant standard."
6. Completion of the installation, sampling, and final inspection must occur by date.

The installation of a treatment system for the purpose of meeting a public health standard requires ongoing surveillance and monitoring. These responsibilities include the following:

1. When treatment is installed for public health reasons a public water supply system is required to have a certified operator with a minimum classification level of D-5. Operator in charge name, who holds a certification level of operator level certification, is listed as the certified operator for this facility.
2. The certified operator should visit the supply to inspect the system frequency (default for D-5 is weekly, see Policy ODWMA 399-0017 -- J07 in the manual). Visual checks must occur and be recorded weekly. Visit frequency may be reduced over time if certain conditions are met.
3. The certified operator is required to submit a monthly operational report (MOR) for units to the LHD no later than the 10th day of the following month. A blank MOR is enclosed.
4. Monitoring of each treatment system requires routine analysis of the treated water to confirm compliance:
 - a) Describe routine sampling requirements here: analytes sampled, sampling schedule, sampling location. The test results must be recorded and submitted on the MOR.
5. An Operation and Maintenance Manual for the treatment system shall remain on site and be available for reference.
6. Every year, the treatment system must be inspected by the LHD in conjunction with the certified operator to ensure that it continues to operate as permitted and without sanitary defects. Annual inspections will be required beginning September 1, XXXX.

LHD: Remove paragraph if system does not treat an analyte calculated with an RAA Compliance with the contaminant standard is based on the running annual average (RAA) of quarterly samples.

To avoid exceeding the Maximum Contaminant Level, it is important to closely monitor the treatment system performance and perform maintenance if contaminant levels begin to increase. If the treatment system no longer appears to be operating as designed, contact your system designer, and inform this office.

If you should have any questions on this matter, please contact me phone and email.

Sincerely,

Encl: EGLE Letter: Recommendation to Permit Regulated Treatment and Attachments
Blank Monthly Operation Report (MOR) Template

CC: Treatment System Designer
Certified Operator
EGLE EQA
EGLE Reviewing Engineer

EXAMPLE LETTER

LHD: Remove or add information as needed

RE: Regulated Treatment System Final Approval for PWS Name, WSSN

Dear PWS Owner,

LHD has inspected the installation of describe treatment water treatment system(s) for PWS Name. The treatment system(s) have been installed according to the approved plans and may be placed into service.

The installation of a treatment system for the purpose of meeting a public health standard requires ongoing surveillance and monitoring. These responsibilities include the following:

1. PWS Name is required to have a certified operator with a minimum classification level of D5. Operator in charge name, who holds a certification level of operator level certification, is listed as the certified operator for this facility. PWS Name is required to notify this office within 7 days if there is a change in the certified operator.
2. The certified operator should visit the supply to inspect the system frequency (default for D-5 is weekly, see Policy ODWMA 399-0017 -- J07 in the manual). Visual checks must occur and be recorded weekly. Visit frequency may be reduced over time by LHD.
3. The certified operator is required to submit a monthly operational report (MOR) for units to LHD no later than the 10th day of the following month. A blank MOR is enclosed.
4. Monitoring of each treatment system requires routine analysis of the treated water to confirm compliance:
 - a) Describe routine sampling requirements here: For Example: Weekly field arsenic testing is required for a minimum of 3 months. The department will review the results and determine if weekly testing can be reduced after data is analyzed. Quarterly certified lab tests are required. The test results must be recorded and submitted on the MOR.
 - b) *LHD: Some POE systems may require a revision to lead and copper sampling. Remove subsection b if not applicable.* Changes in water chemistry, like installing treatment, can negatively affect the plumbing and inadvertently leach lead or copper into the drinking water. Lead and copper monitoring will increase to semi-annual for a period of one year beginning
 - a. Monitoring Period: Jan-Jun ; Jul-Dec
 - b. Number of Samples: each monitoring period
 - c. Sample Locations:
 - c) *LHD: Remove subsection c if not applicable.* Samples of contaminant collected from the untreated sample tap where the water enters the building (raw water tap) are generally not required for compliance but may be required for other purposes. Please properly label these samples "raw water tap" so that they are not used in compliance determination.
5. An Operation and Maintenance Manual for the treatment system shall remain on site and be available for reference.
6. Once per year, the treatment system must be inspected by the LHD in conjunction with the certified operator to ensure that it continues to operate as permitted and without sanitary defects. Annual inspections will be required beginning September 1, XXXX.
7. *LHD: Remove if not applicable.* As a condition of the permit, all potential drinking water locations receiving untreated water must be permanently posted. The recommended language is "Do Not Drink, exceeds contaminant standard." These signs were in place at the time of inspection.

To avoid exceeding the Maximum Contaminant Level, it is important to closely monitor the treatment system performance and perform maintenance if contaminant levels begin to increase. If your treatment system no longer appears be operating as designed, contact your system designer, and inform this office.

If you should have any questions on this matter, please contact me phone and email.

Sincerely,

Encl: Blank Monthly Operation Report (MOR) Template

CC: Treatment System Designer
Certified Operator
EGLE EQA
EGLE Reviewing Engineer

EXAMPLE LETTER

LHD: Remove or add information as needed.

RE: Unpermitted Drinking Water Treatment at System Name
WSSN

Dear _____ :

During a site visit of System Name on date, I observed an unpermitted treatment system on the water supply. Any significant changes to an existing regulated noncommunity water supply, including water treatment systems, must be reviewed and approved by the State of Michigan Department of Environment, Great Lakes, and Energy (EGLE) and this office. You are in violation of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended.

You are hereby ordered to immediately discontinue use of the treatment system and physically disconnect the treatment system and associated lines from the water supply. This must occur by date.

Water System Name has the following options:

1. Discontinue the use of injected chemical treatment. Injection of chemical treatment is not required by the Safe Drinking Water Act and it is specifically prohibited without LHD approval. There may be other water treatment options available to mitigate aesthetic concerns such as taste or odor. Not all of these treatment options require the same degree of oversight as chemical injection; please contact LHD for more information.

Or

2. Submit two copies of the enclosed application along with plans, specifications, and the operation and maintenance manual for the treatment system.

It is required that regulated chemical injection treatment systems have:

- A construction permit approved by EGLE and LHD; and
- A D-5 level certified operator; and
- Monthly Operation Reports (rule 505(d) of the Michigan Safe Drinking Water Act, 1976 PA 399).

Any treatment device that touches the distribution system must be NSF certified. For a chemical injection treatment, NSF 60 and 61 standards are required. These certifications show that the equipment will not leach harmful chemicals into the water, and it is required for regulated treatment (see rule 2102(3)).

For a chemical injection treatment system, either a certified operator must be hired or a select employee must register for the next certified operator exam. A certified operator must monitor the chemical injection treatment for water quality purposes at a D-5 level. Failure to do so puts the facility into noncompliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the Act's Administrative Rules and may result in enforcement actions. Information and applications for certified operators can be found online at www.michigan.gov/deqoperatortraining.

Please contact LHD by date to confirm that the treatment system has been physically disconnected and removed from the vicinity of your water supply. Once the unit has been disconnected, please contact LHD to relay your choice regarding the water treatment. Failure to contact this office by the dates listed will result in further enforcement actions.

Encl: Water Treatment Systems – Fact Sheet
Water Treatment System Construction Permit Application

CC: Environmental Health Director
Noncommunity Drinking Water Unit
Campground Unit

REGULATED TREATMENT APPROVAL PROCESS

Compliance Guidance for Local Health Departments

Introduction

Water treatment systems used to remove substances (such as arsenic or nitrates), which may affect a consumers' health are regulated. These are considered "treatment systems for public health purposes." Also, any treatment system that injects chemicals into the water is a regulated treatment system. A permanent, safe water source (such as connecting to a different well or municipal water) must always be considered before installing regulated treatment. Treatment system design is important: EGLE review of well-established treatment designs may take less time than designs with less data. Rule 1304 of the Michigan Safe Drinking Water Act requires that supplies obtain permits for regulated treatment prior to installation of the treatment system.

Treatment Review Process

Noncommunity Water Supply applies to install a regulated treatment system.		
Completed: ☐ Date:	A completed treatment application is received by the local health department. <i>Note: Proof of NSF certification for all water system components is a part of the review.</i>	
NA: ☐ Completed: ☐ Date:	Designs with a waste stream, such as ROs and water softeners, may need a groundwater discharge permit from EGLE's Water Resources Division.	
Completed: ☐ Date:	Local health department reviews the application for administrative completeness.	
Treatment Design undergoes EGLE engineering review.		
Completed: ☐ Date:	LHD sends EGLE the application. EGLE assigns an engineer to begin the review process.	
Completed: ☐ Date:	EGLE completes the initial review response and returns all comments or questions about the design to the supply and system designer. This process generally takes 2-3 weeks.	
Completed: ☐ Date:	There is often a back-and-forth exchange of information between system designer and EGLE engineer. This process may include the local health department, or it may be between designer and reviewer. Other permits or approvals may be required. This process is not complete until all public health concerns have been addressed.	
Treatment System permitted and approved. <i>System is permitted and installed as designed.</i>		
Completed: ☐ Date:	EGLE sends a recommendation to install regulated treatment letter to the local health department.	
Completed: ☐ Date:	Local health department issues a permit to install the system with a deadline for completion.	
Completed: ☐ Date:	System is installed and all follow-up requirements (e.g., water sampling or public posting) are completed.	
Completed: ☐ Date:	Local health department (and EGLE) complete a final inspection to verify the system was installed as designed. The local health department approves the system to serve treated water.	
Sample Dates: Bacteria 1: _____ Bacteria 2: _____ Other (Date): _____		
Classification Changed: _____ MOR Schedule: _____ Postings Approved: _____		
Final Inspection Date: _____ Reinspection Date: _____ Approval Date: _____		
Certified Operator Designated: _____		