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GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



September 9, 2002

TO: Local Health Departments
Attn: Environmental Health Directors
Water Well Drilling Contractors
Pump Installers

FROM: Michael Gaber, Chief
Well Construction Unit
Groundwater Section
Drinking Water and Radiological Protection Division

SUBJECT: Bacteriological Water Testing – Frequently Asked Questions

Recent discussions among officials from the Department of Environmental Quality, Drinking Water and Radiological Protection Division, Ground Water Supply Section, and stakeholders have prompted this memorandum to answer frequently asked questions about the responsibility for coliform bacteriological testing of new and repaired water supply systems.

Frequently Asked Questions

- 1. Who is responsible for collection of a bacteriological water sample from a new, repaired, or reconditioned water supply system?**
Administrative rule R 325.1661(3) of Part 127, 1978 PA 368, as amended (state well code) makes the water supply owner responsible for collecting the water sample or arranging for the owner's designated representative to collect the sample.
- 2. Who is responsible for notifying the water supply owner of the owner's responsibility for collecting the sample(s)?**
R 325.1661(3) places the responsibility for notifying the owner on the well drilling contractor or pump installer. In addition, Local health departments (LHDs) should use the permitting process to communicate the need for sampling to the owner.

When a new home is constructed, the building contractor may temporarily be the well owner. Well drilling contractors and local health department officials should inform builders of the need to have negative coliform bacteria samples from the water system before the home is occupied.

3. Does a new or repaired water supply system have to be sampled for coliform bacteria before being placed into service?

Yes. Because of public health concerns due to the potential for waterborne illness, R 325.1661(2) requires that before a new, repaired, or reconditioned water supply system is placed into service, and after all traces of chlorine have been flushed out, 1 or more samples shall be collected from the sampling faucet and that coliform organisms not be present.

4. Is the water well drilling contractor responsible for providing water that is free of coliform bacteria?

Yes. R 325.1621(2) states that a well shall be "adequate in size, design, and development for the intended use giving due consideration to local groundwater conditions." If the water supply system is intended to furnish drinking water, the well, pump, and pumping equipment must be found to be free of coliform bacteria to be consistent with the definitions of "water supply well" in R 325.1606(3), and "potable water" in R 325.1604(3).

Wells located in some isolated geological settings, such as Karst terrains (fractured limestone bedrock close to surface), may produce water containing coliform bacteria, even though wells are properly constructed. If monitoring clearly shows that the well drilling contractor is not responsible for the contamination, it is in the contractor's best interest to work with the local health department and the well owner to find a solution to the water quality problem.

5. If a well owner begins using a new well that has not yet been tested, or uses it before the test results are available, what advice should be given to the owner?

Because the safety of the water cannot be assured, the owner should be advised to refrain from drinking, cooking, or bathing with the water until after a safe sample has been obtained. As an interim measure, the owner should use a safe alternate source of potable water.

6. Can a well drilling contractor, pump installer, or LHD be an owner's designated representative and collect the sample(s) on the owner's behalf?

Yes. A well drilling contractor or pump installer may act as the owner's designated representative when a written contract for construction of the water supply system or installation of pumping components is executed. An LHD may also act as a designated representative of the owner when the owner applies for a well construction permit.

7. Does the DEQ recommend that well drilling/pump installation contractors collect the water samples?

Yes. The DEQ has found that too often new water systems have been placed into service without bacteriological testing. Well owners are usually not aware of

their responsibility for sample collection and they may have incorrectly assumed that either the well drilling contractor or LHD tested the water.

If well owners have been consuming the water and testing later reveals bacterial contamination, the owners may become distraught and trust in the safety of their drinking water is eroded. By collecting water samples upon completion of the installation, well drilling contractors are helping to protect public health.

8. What are the benefits to the water well industry if contractors include water testing as part of the well installation package?

By furnishing the well owner with a copy of the water test results, the contractor (1) assures the well owner that the water is safe for consumption, (2) creates or reinforces consumer confidence in water wells, (3) shows the well owner that they are confident in the work they have just completed, (4) helps to enhance business and reduce liability, and (5) helps protect the future of the water well industry.

Water sample collection by untrained individuals (such as well owners) can result in false positive results. Contractors can reduce the chances for such errors by collecting the samples themselves or arranging for a private laboratory of their choice to collect and analyze the samples. In counties where the LHD collects the samples from each new water system, independent sampling by the contractor can reinforce the findings of the LHDs water testing. If a sample collected from a kitchen sink by the owner or LHD is positive (unsafe), a negative (safe) sample collected by the contractor from the sample faucet helps show that the water source is safe.

9. If neither the well drilling contractor or the local health department collect the water sample, how should the well owner be notified of the need to for water testing?

*One method the well driller can use is to give the owner the **Well Disinfection & Sampling Notice** (attached), upon completion of well disinfection. If the owner is not present, the notice should be posted in a conspicuous location (at kitchen faucet, if possible) The use of the **Well Disinfection & Sampling Notice** satisfies the notification requirements of R 325.1639(9) and R 325.1661(3) of the state well code.*

A statement on written job estimates and contracts is another means of notifying the well owner. LHDs can use permit forms, inspection tags, or educational outreach materials to advise well owners to collect samples.

10. Where should bacteriological sample(s) be collected?

A water sample from a new, repaired, or reconditioned well or water supply system shall be collected from a downturned faucet, not less than 8 inches above

the floor, in a convenient location at the pressure tank or as near to the well as possible. The intent of the water sampling mandated in the state well code is to evaluate the sanitary integrity of the well drilling/pump installation contractor's work.

A sampling point downstream (within the building distribution system) from the standard sampling faucet may also be used. If a sample or series of samples collected from the distribution system are negative, health officials presume that the upstream source of the water is safe. However, in cases where a positive sample was collected from a kitchen sink or other distribution point that lies beyond the portion of the system on which the contractor worked, and a sample was not collected from the tap near the pressure tank, the well may be inappropriately targeted as the cause of the contamination. By collecting a sample to test the integrity of the completed work, the sample collector can help avoid misunderstandings as to the source of a bacteriological problem.

11. Are LHDs mandated to collect the bacteriological water sample(s) as part of their permit/inspection programs?

No. The DEQ advises LHDs to collect samples when they perform final inspections. Unfortunately, not all LHDs have the resources needed to sample each new or repaired water system. Often LHDs face local opposition to raising fees high enough to support the resources it would take to sample all wells.

12. Is an LHD authorized to accept the results of water tests collected by others?

Yes. An LHD may accept the results of water samples collected by well owners, contractors, or private sector inspectors. The samples should be collected in accordance with instructions that accompany the sample container and shall be analyzed in a state certified laboratory. If LHD staff has reason to doubt the validity of the results of samples that were collected by others, LHD staff should investigate the matter and collect further samples.

13. If an LHD does not collect samples, are they required to verify that a safe sample has been obtained before approving a water supply?

Yes. While the state well code does not contain criteria for final approval of new water systems, the DEQ expects LHDs to track bacteriological sampling status for each well permit they issue. The goals of the tracking are to:

- *Maximize the rate of sampling of new water systems.*
- *Minimize health risk by ensuring that positive bacteriological samples receive prompt attention.*
- *Provide a means of identifying which new water systems have not been sampled so that owners can be notified.*

The DEQ encourages LHDs to work with local building officials to incorporate water supply approval by the LHD as a prerequisite for issuance of building occupancy permits. This process will help ensure that water quality is suitable before inhabitants of the building consume the water.

14. Is the well drilling contractor responsible for re-disinfection of the water supply system if a positive sample is collected after the system is placed into service after an initial negative sample?

If the water system construction complies with the state well code and initially tested negative but tests positive after the well is in service, the well drilling contractor would not be responsible. In such cases, it is in the best interest of the contractor to diligently work with the customer to eliminate the contamination.

15. Can a well drilling contractor charge the well owner for rechlorinating a water supply system?

The state well code does not address costs for well services. Therefore, charges are as agreed upon between the contractor and customer. Chlorination of the distribution system and unusually stubborn bacterial problems that require extensive disinfection techniques can result in additional cost to the owner. Contracts between customers and well drilling contractors should clearly specify any chlorination/rechlorination charges.

16. Is a well drilling contractor responsible for positive coliform bacteria samples that are collected from a source outside of the portion of the water system on which the contractor performed work?

No. If the samples have been collected from a point outside of the portion of the water system upon which the contractor has performed work, the contractor is not responsible for rechlorination. However, the contractor may become responsible if follow-up testing after a positive result from the distribution system shows coliform bacteria to be harbored in the portion of the system upon which the contractor has worked.

17. What is the penalty for misrepresenting the bacteriological quality of the water?

Activities such as boiling or microwaving a sample, adding chlorine to a sample, intentionally failing to flush all chlorine out of the well before sampling, filling a sample bottle with water from another source, or falsifying a sample report could result in criminal prosecution. Revocation of a contractor's certificate of registration could also result.

The attached DEQ Fact Sheet: **Coliform Bacteria & Well Water Sampling** is available without charge from the DEQ, Water Division, using the order form.

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If you have any questions, please contact me at 517-241-1374.

MSG:ckp

cc: Ground Water Advisory Committee
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Attachments: Fact Sheet: Coliform Bacteria & Well Water Sampling
Well Disinfection & Sampling Notice
DEQ-DWRPD-GWSS Publications Order Form