DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Drinking Water

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ODW Guidance for CCR Reporting of Item #2: Source(s) of Water

Definitions:

- CCR: Consumer Confidence Report
- CFR: Code of Federal Regulations
- DNREC: Department of Natural Resources and Environmental Control
- EPA: Environmental Protection Agency
- ODW: Office of Drinking Water
- Susceptibility: based on the vulnerability of the well with discrete and/or potential sources of contamination – the possibility that the public supply well might draw contaminated water at concentrations of concern to public health.
- Vulnerability: based on the construction of the well – the relative ease that contaminants, if released into a wellhead protection area, could enter a public supply well at concentrations that may affect public health.

CCR Item #2 Requirement as Published in the CFR

The EPA's CCR requirements consist of eight items. This guidance illustrates how to report the requirements of Item #2: Source(s) of Water. The CCR Rule was published in 40 CFR Subpart O § 141.151. The requirements for Item #2: Source(s) of Water are detailed in § 141.153(b) as follows:

> **"(b)** Information on the source of the water delivered:
>
> **(1)** Each report must identify the source(s) of the water delivered by the community water system by providing information on:
>
> **(i)** The type of the water: e.g., surface water, ground water; and
>
> **(ii)** The commonly used name (if any) and location of the body (or bodies) of water.
>
> **(2)** If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the primacy agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the primacy agency or written by the operator."

How to View Your Source Water Assessment

DNREC has completed source water assessments (assessments) for most of the community water systems in Delaware. Visit http://delawaresourcewater.org/assessments/ to find an assessment for your water system. If your water system is not present on this web page, then DNREC has not conducted an assessment for your system.

Information needed from the source water assessment to complete the CCR requirement for Item #2

The assessment is an informative document that contains information about the public water supply well construction, geology and hydrology of the aquifer, source water protection area, the vulnerability of the well to contamination, sources of contamination, water quality, etc. ODW advises that you review your

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assessment to familiarize yourself with the contents of the document. Note that the assessment that you may view on the web has redacted information for security reasons. However, for the purpose of using the assessment to create the required text in your CCR, the redacted version is sufficient.

Assessment's Summary: After you have reviewed the contents of the assessment, locate the summary. The summary may be located in the beginning or end of the assessment. Refer to the table of contents. The summary may contain most, if not all, of the information needed for Item #2 in the CCR.

The summary from an assessment published in 2018 is below. The name of the water system and other identifying information was replaced with [ ] brackets. In addition, each paragraph is numbered and referenced in the next section. Keep in mind that each assessment's summary is specific to that water system. The content of each summary may differ from one assessment to another.

1. "The Delaware Department of Natural Resources and Environmental Control's (DNREC) Division of Water Resources has completed the Source Water Assessment for the public water supply wells for [Water System]. This Assessment is required under the 1996 amendments to the Safe Drinking Water Act. The compiling of this assessment followed the methods specified in the State of Delaware Source Water Assessment Plan (DNREC, 1999).

2. [Water System] uses three wells to provide drinking water to the system. These wells are classified as having a high vulnerability because they are drilled to a depth of less than 100 feet and no significant clay layers exist between the ground surface and the well screen. As an unconfined well capable of pumping over [number] gallons per day, the wellhead protection areas are delineated using a computer model that simulates ground-water flow.

3. This public water supply system provides water to an average daily population of [number] residential consumers from January 1 to December 31 through [number] residential service connections.

4. Current data indicates that there is an underground storage tank within the wellhead protection area for [Water System]. This site has a negligible contaminant potential for nutrients, pathogens, petroleum hydrocarbons, pesticides, PCBs, other organic compounds, metals, and other inorganic compounds.

5. Based on the 2007 Land Use and Land Cover (Appendix A, Map 4), approximately 60 percent of the total wellhead protection area for the system contains combined urban land use and 15 percent animal operations (CAFOs). Approximately 12 percent is commercial and 9 percent wetlands. Approximately 2.5 percent is residential with cropland and forested less than 1 percent.

6. The DPH-ODW analytical database was queried for raw/untreated water quality data for the past five years. The data for well [number] showed concentrations of manganese exceeded the Secondary National Drinking Water Standard. The data showed concentrations of sodium exceeded the Health Advisory Level.

7. The data for well [number] showed concentrations of manganese were greater than one-half the Secondary National Drinking Water Standard.

8. The data for well [number] showed concentrations of cadmium, radium-226 and radium-228 exceeded the Primary National Drinking Water Standard. Concentrations of nitrate were greater than one-half the Primary National Drinking Water Standard.

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9. The data also showed concentrations of aluminum, manganese and pH for well [number] were greater than one-half the Secondary National Drinking Water Standard. The data showed concentrations of nickel were greater than one-half the State of Delaware Drinking Water Standards.

10. Within a public drinking water system, each well could have a different susceptibility rating. The system susceptibility ranks the wells as a group. [Water System] is exceedingly susceptible metals and other inorganic compounds. It has a very high susceptibility rating for nutrients and a high susceptibility for pathogens, petroleum hydrocarbons, pesticides, PCBs and other organic compounds."

How to use the information in the assessment's summary to fulfill the CCR Item #2 requirement

The information in the above summary may be used to fulfill the Item #2 requirement in the CCR, however it may be necessary to refer to other sections in the assessment for more information or clarification. The Item #2 requirement consists of four individual requirements:

A. the type of water
B. the commonly used name (if any) and location of the body (or bodies) of water
C. the availability of a source water assessment
D. a brief summary of the system's susceptibility to potential sources of contamination

A. Type of Water

There are two types of water for any public water system in Delaware — groundwater or surface water. The type of water is found in paragraph #2 of the summary — three wells (groundwater).

B. Commonly Used Name and Location of the Body of Water

The name of the aquifer is not listed in this summary, however the table of contents lists "Geology and Hydrology". Within that section is the following paragraph:

> "[Water System] withdraws water from three wells in the unconfined Columbia Group aquifer. The surficial unit of the unconfined aquifer is the Beaverdam Formation (Ramsey and Tomlinson, 2014). Within the models domain, the Beaverdam Formation is underlain by the confined Manokin aquifer in the northern portion and the sub cropping Pocomoke aquifer in the south (McLaughlin et al., 2015)."

The excerpt above reveals that this water system uses water from the unconfined Columbia Group aquifer. The text goes on further to explain the specific geology of this portion of the Columbia Group aquifer. Since the CFR asks for the "commonly used name," we will simply record the "unconfined Columbia Group aquifer" as the commonly used name in the CCR. The location requirement for a groundwater system refers to the confined or unconfined type of aquifer. In this case, the aquifer is unconfined.

C. Availability of a Source Water Assessment

Most water systems in Delaware have had a source water assessment completed by DNREC. The assessments are located on the internet at the following web address: http://delawaresourcewater.org/assessments/.

If your water system is not present on this web page, then DNREC has not conducted an assessment for your system.

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D. Summary of the System's Susceptibility to Potential Sources of Contamination
The CCR summary for this water system's susceptibility to potential sources of contamination may seem complex based on the assessment's summary as reproduced above. Refer to paragraphs #4 to 9 in the assessment's summary. Those paragraphs detail recent raw water data from each of the three wells, and land use and land cover in the wellhead protection area.

Although interesting, the raw water data is not used in the CCR Item #2 summary. Paragraph #10 explains the system's susceptibility as a whole based on the information in paragraphs #4 to 9. However, do not use paragraph #10 as a stand-alone CCR summary since the context of the summary will be lost without the supporting information in paragraphs #4 to 9.

Instead, you should write your own summary based on the assessment's summary. Paragraph #2 states that the wells have a "high vulnerability because they are drilled to a depth of less than 100 feet and no significant clay layers exists between the ground surface and the well screen." The high vulnerability rating was given due to the lack of a protective confining layer above the aquifer. In this case, the high vulnerability rating also means the wells are susceptible to contamination as illustrated in the contaminants detected in paragraphs #6 to 9.

Putting it all together: An example of a CCR Item #2 requirement

The following is an example of the CCR Item #2 requirement from the information presented in the source water assessment:

> **Our Water System's Sources of Water**
> Our water system uses ground water from three wells. All three wells are drilled less than 100 feet deep in the unconfined Columbia Group aquifer. An unconfined aquifer is an aquifer without a confining (protecting) layer of clay or silt above it. The confining layer would help prevent contaminants from moving into the aquifer.
>
> **Our Water System's Susceptibility to Contamination**
> Since our three wells are located in an unconfined aquifer, the wells are very susceptible to contamination from sources of contamination such as underground storage tanks, septic systems, residential land use, and crop land use. You may view our assessment on the Internet at http://delawaresourcewater.org/assessments/.