

## Corrective Action Evaluation Review Sheet

The purpose of the Corrective Action Evaluation Review Sheet is to serve as a tool for evaluating options necessary to remedy applicable elevated maximum contaminant levels detected in a public water supply well. Use of the Corrective Evaluation Review Sheet is optional. The information provided in this review will be used to evaluate preferred options necessary to provide safe drinking water to a public water supply system's customers. The preferred options include: 1) new well construction; 2) reconstructed well; or 3) connection to an alternative drinking water supply system. The preferred options evaluation may include cost analysis. Based on the availability of safe water, feasibility of obtaining water, and on the cost analysis of the preferred options, an evaluation for treatment may also be part of the corrective action evaluation. The corrective action process is required under NR 812.37 (2)(e) Wis. Adm. Code.

Site Information			
PWS ID:			
PWS Name:			
Street Address:			
City:	County:	State: WI	Zip:
Owner:		Phone:	
		Email:	
Sampler:		Phone:	
		Email:	
Type of Public Water System			
Population Non-transient:		Population Transient:	
Groundwater %:		Surface Water %:	
Water Meters:		Service Connects:	
Storage Capacity:		Pumpage rate:	
Design Capacity:	Seasonal System:	Dates of operation:	

### I. PROPOSED ACTION(S)

Indicate the plan you propose to solve your problem. You will need to contact well drillers, pump installers, consultants or other contractors to get an estimate of the work and practicality of a solution. Call your DNR Water Supply Specialist, if necessary, to help you define your options. A summary of items to consider when evaluating the availability and feasibility of each alternative is listed in Section II.

<b>Alternatives Considered</b>	<b>Available</b>	<b>Feasible</b>
1. Construction of a replacement well	Yes / No	Yes / No
2. Reconstruction of existing well	Yes / No	Yes / No
3. Connection to an existing public or private system	Yes / No	Yes / No
4. Treatment (only if all others are not feasible)	Yes / No	Yes / No

Summary of Chosen Alternative:

Regional Water Supply Specialist Recommendation and Comments:

## II. JUSTIFICATION OF CHOSEN ALTERNATIVE

Attach all available items listed below to justify the chosen alternative.

### 1. General Site Information and Site History

- A. Site Location: Describe the location of the site, both generally and specific to its immediate surroundings (i.e. land use, proximity to buildings, surface water bodies, potential contaminant sources).
- B. Prior and Current Water Site Use: Describe the current and historic types of uses for the public water supply system. (Types of water use include drinking water, cooking, washing and bathing, manufacturing processes, etc.)
- C. Provide the date of the maximum contaminant level (MCL) violation or the confirmed 20.5 mg/L nitrate exceedance. Provide the sampling locations where the violation and exceedance occurred.
- D. Discuss the current nitrate or other contaminant of concern concentrations and any observable trends in contaminant sample results. Describe any additional problems with sample results.
- E. Describe the suspected source of contamination and any factors that may have contributed to the exceedance in the water system (factors include; seasonal weather, unique weather event, land use, or local geology).
- F. If applicable, discuss any efforts to reduce contaminant impacts to groundwater from the suspected source.

### 2. Location Maps and other Figures

- A. Identify all relevant features on a detailed site map, including well locations, septic tanks and absorption fields (drain fields), and potential contaminant sources, buildings, surface water

bodies, etc., within 1,200 feet of the current and proposed well sites. Provide a scale for the map.

- B. An area map with the location of all potable wells within a ½ mile of the site. (If water quality data and contaminant concentrations for any of the potable wells within the area are available, the information should be submitted along with the map.)

### 3. General Site Conditions

Describe the layout of the current distribution system. Items that may be important to mention are as follows:

- Well (location, total depth and casing depth)
- Pressure tank
- Holding tank
- Any treatment for aesthetic purposes or to comply with an MCL. Indicate if the treatment is DNR and/or DSPS approved.

### 4. Reconstruction/Replacement Well

- a. Describe the system's well construction.
- b. Provide a copy of the well construction report for each well serving the public water system (if available).
- c. Do all existing wells on the site conform to the requirements of ch. NR 812, Wis. Adm. Code, *Well Construction and Pump Installation*?
- d. Is there evidence of high/low contaminate concentrations in groundwater at other locations near the property on which the public water system is located?
- e. Are there other any drinking water quality concerns due to local geology?
- f. Casing recommendation for reconstructed/replacement well (provide a brief description of why this casing depth was selected).
- g. Total well depth recommendation for reconstructed/replacement well (provide a brief description of why this total well depth was selected).

### 5. Connecting to an Alternate Safe Water Source

- a. What are the current and future water quantity (gallons per minute) needs for the system?
- b. Could a nearby water supply system meet these water needs and provide an alternate safe water source?
- c. Is the alternate safe water source within a reasonable distance?
- d. Would connecting to a nearby water supply result in drinking water quality issues such as increased lead or disinfection by-product levels?

### 6. Blending

- a. Is another source of water available that could be used for blending?
- b. If blending is possible, can the water sources be blended to be in compliance with the MCL at all entry points to the distribution system?
- c. If blending is possible, identify any associated water treatment processes. Describe any water quality issues that may result from treatment. Identify any water quality and treatment process impacts that might result from blending.

## **Additional Items that May be Considered in the Evaluation**

### **7. Groundwater**

- A. Discuss depth to groundwater; describe the water-bearing formations below the property on which the system is located and the expected yield.
- B. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.
- C. Provide any additional groundwater quality information (including sample results obtained by sampling or provided by well drillers, environmental consultants, DNR or any other available sources).

### **8. Data Tables**

- A. Drinking water and Groundwater Analytical Table(s): Table(s) showing the analytical results and collection dates for all groundwater sampling points (i.e. public water supply wells, monitoring wells, etc.) from which contaminant samples have been collected. The table should also include the distance from the surrounding sampling points to the impacted system.
- B. Other Media of Concern (e.g., sediment or surface water): If available, it may be useful to look at nearby soil data and or surface water data for contaminant concentrations. If the information is available and is submitted as part of the evaluation process, the data table should include sampling results, dates, and locations.

### **Availability Analysis**

A discussion of the availability of each alternative should be prepared. Treatment will only be allowed as an option if a safe source cannot be obtained or there are other factors that make obtaining a safe source of drinking water impractical.

### **Feasibility Analysis**

Utilizing the information presented in the previous sections, the feasibility of each preferred option (a replacement or reconstructed well or connection to an alternate water source) should be evaluated. Upon completion of the evaluation process, if the preferred options are determined to not be feasible, the system owner should consider the remaining review items to evaluate treatment installation as a corrective action.

### **Cost Analysis**

If costs are a consideration when evaluating the preferred options, the system owner should evaluate the costs of 1) constructing a new well; 2) reconstructing a well; 3) connecting to an alternate water supply; and 4) treatment costs. Comparisons of the costs for the options should be presented to DNR along with the supporting material outlined in the evaluation review sheet.

### **9. Treatment Option/Design**

(Note: Treatment may only be considered if an alternate code-compliant source is not available or feasible.)

#### **Point of Entry Treatment**

- A. System owner should indicate the preferred treatment option and determine that the treatment system is a Department of Safety and Professional Services (DSPS) approved device or it is a device that can be approved for the proposed use. [Formal site-specific approval from DSPS shall be obtained prior to installation of any treatment devices used to address a MCL violation.]
- B. Identify water use and system capacity.

- C. Provide a draft plan for treatment installation.
- D. Indicate and or describe how operation/maintenance of the treatment system will be performed.
- E. Identify compliance and on-site water quality monitoring that will be completed following installation of the proposed treatment and as part of the continued operation of the system.

**Supporting Cost Information**

System owners that choose to include cost in the evaluation process should fill out the table below. Specific elements to consider and include for each option are as follows:

- a. Well Replacement/Reconstruction: Provide cost estimate for drilling a new well, casing depth and target well depth. Include cost of any new plumbing and associated construction. Identify any operational and maintenance costs (i.e. this could be the cost of electricity for the well pump, aesthetic treatment). Include monitoring costs. Provide cost information for a ten year period.
- b. Connecting to an alternate safe water source: Provide cost estimate for connecting to a nearby water system. Include the cost of purchasing water from the nearby system. Identify any additional operation, maintenance and monitoring costs that may result from connecting to an alternate supply. Provide cost information for a ten year period.
- c. Point of Entry Treatment: Provide cost estimates for installing treatment and any operation and maintenance costs. It may be necessary to consider multiple treatment systems installed in series in situations where contaminant levels approach the limits of treatment efficacy. Include any pre-treatment and post-treatment monitoring requirements.

Corrective Action Options	Installation/ Construction Costs	Operation & Maintenance Costs in 10 year period	Monitoring Costs in 10 year period	Overall costs
Well Replacement/ Reconstruction				
Connection to Alternate Source of Water				
Point of Entry Treatment				