

Sample Wellhead Protection Management Plan

City of Greenville

**PWS
WELLHEAD PROTECTION
MANAGEMENT PLAN**

PWSID # 111111.001

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I. Management Plan

A. Wellhead Protection Management Team

Sally Johnson, Wellhead Protection Committee, Chair
Richard Brown, City of Greenville, City Manager
Steven Clark, City of Greenville, Director of Operations
John Smith, City of Greenville Water Utility, System Operator
Laura Jones, Native Health Consortium, Health Specialist
Harry Hill, Committee for Healthy Neighborhoods, Chair
Leslie Pratt, Chamber of Commerce

B. Purpose

To meet the requirements of the Safe Drinking Water Act (SDWA) as amended in 1986 and 1996, Alaska developed *Alaska's Drinking Water Protection Program – Source Water Assessment and Wellhead Protection Plans* that was approved by EPA in April, 2000. The plan describes a single program known as the Drinking Water Protection Program (DWPP) that meets all of the SDWA 1986 and 1996 Amendment requirements through three components: source water assessments of PWS, groundwater protection, and wellhead protection.

While ADEC is completing source water assessments for each public water system in Alaska, individual public water systems or local communities need to complete Wellhead Protection Management Plans (WPMP) that meet the specific needs of their public water system or community. This report is intended to meet the technical requirements for the completion of the WPMP for **City of Greenville, Alaska** as required by the SDWA.

A WPMP is designed to protect the groundwater used by communities from contamination. Appendix A of this WPMP, “Source Water Assessment, A Hydrogeologic Susceptibility and Vulnerability Assessment”, establishes protected areas overlying the aquifer yielding water to the well and extends up-gradient. The extent of the up-gradient protection area is determined by modeling of the aquifer and projecting the well’s capture zone as determined for several months, two, five and ten years travel time. This long term planning is necessary to provide an early warning mechanism in the event of up-gradient contamination, however, preventing the contamination of a water supply through education and public awareness remains the primary goal.

Most instances of aquifer contamination become known when trace levels of a contaminant are detected through routine monitoring. Drinking water systems that have completed a WPMP will have information on groundwater flow and aquifer characteristics; a detailed contaminant source inventory; and an implementation plan that determines the best response to ensure the continued quality of the water supply.

C. The Community

The City of Greenville is located in South Central Alaska off of Highway 1 at Mile 55, and has a population of 10,000 residents. There is a mix of commercial activities including several gas stations and auto repair shops, a grocery store, a dry cleaners, a drug store, a small strip shopping mall, a dental and medical clinic, a veterinary clinic, two motels, two restaurants, and several fast food establishments. Green Lake is located within the town limits and is a popular recreational site, with an overnight camp ground and picnic facility. The community is served electricity from the Greenville Electric Company, water from the Greenville Water Utility and natural gas from Blue Light Gas Company. The Greenville Public Hospital is a critical customer for the services provided by these companies. The community of Greenville is served solely by individual septic systems.

D. Influencing Factors

The Greenville Wellhead Protection Committee identified by Section A above worked on the formation of this plan. There has been a recent increase in the development of the commercial area downtown. In particular, there is a proposed development plan for a new gravel pit that has raised some concerns among the town's population. In addition, a new residential development, Green Acres, is being proposed which has raised questions about the impact on Greenville Water Utility's public drinking water wells. There also is a perceived threat to drinking water quality due to the large number of older septic systems within the community.

E. Geographic Setting and Description of the Aquifer

See Appendix A, "Source Water Assessment, A Hydrogeologic Susceptibility and Vulnerability Assessment for Greenville Water Utility Drinking Water System, Greenville, Alaska"

F. The Public Drinking Water System and Source Well

See Appendix B, “Sanitary Survey Report for **Greenville Water Utility**”, conducted by **Edward Sampson**, on **June 30, 2001**.

Deficiency or Needed Improvement	Corrective Action	Completion Schedule
There is an old barrel of unknown fluid, possible hazardous waste, within 100 feet of the wellhead.	Properly dispose of barrel according to hazardous waste requirements.	By May 1, 2003
Crack in the Sanitary Seal	Repair crack in the Sanitary Seal	By June 1, 2003
Well vent is not properly screened	Install screen over the well vent	By August 1, 2003

G. Wellhead Protection Area

See the “Assessment and Protection Area for **Greenville Water Utility** Drinking Water Source” section, of Appendix A and Map 1 of Appendix A.

H. Contaminant Source Inventory

See the contaminant source inventory description, tables and maps in Appendix A.

I. Prioritization of Implementation Plan

The prioritization of the following implementation plan was developed based on a **combination of a community watershed approach and the level of risk a particular contaminant source poses to the well.**

Wellhead Management Implementation Plan

	Contamination Type from Table 1	Zone from Table 1	Risk Level from Tables 2 - 7	Protection Tool from drop-down boxes	Strategy method for implementing	Schedule
Priority 1	Residential and large capacity	A and B	High	Public Education	Direct mail a fact sheet on	Complete by June

	septic systems				the proper maintenance and use of septic systems to each business and residence within Zone A and B of the Protection Area.	1, 2003
Priority 2	Proposed Gravel Pit	A	Low	Special Permitting	Will require any new commercial business within Zones A and B of the Protection Area to obtain a permit requiring a plan review process. Will set special requirements to insure groundwater protection.	Permit process in place by Sept., 2003
Priority 3	New Residential Development (Green Acres)	B and C	Low	Cluster Zoning and PUDs	Will require developer to cluster all residential housing within Zone C and leave area in Zone B as open space.	Zoning in place by October, 2003

II. Contingency Plan

A. Purpose

The contingency plan identifies the principal threats to the source water, designates an emergency response coordinator, describes a series of potential response scenarios planned in the event the drinking water source is threatened or contaminated, and describes a plan for an alternate source of water in the event the drinking water source is permanently disabled.

B. Possible Threats

The principal threat to the public drinking water system is identified as a spill, leak, or discharge in Zone A of the Wellhead Protection Area which could contaminate the source water by entering through the well bore; contaminate shallow groundwater and enter through a failed well casing; or entering the aquifer through ground saturation. Included are spills from vehicles, spills from mobile liquid holding tanks, leaks from above or below ground fuel tanks, leaks from septic systems, among others.

A secondary threat is from Highway 1 that runs through the downtown area of Greenville and is located within Zones A and B of the Wellhead Protection Area. Highway 1 is a preferred route for commercial vehicles traveling to and from the major commercial centers of Fairbanks and Anchorage. Potential threat comes from the possibility of a vehicle accident or overturned tanker truck resulting in a spill of fuel or other hazardous material.

C. Emergency Coordination

The emergency coordinator for Greenville Water Utility is Steven Clark. The contact phone number is 907-333-6667. The backup emergency coordinator is John Smith at 907-333-6668.

The emergency coordinator is familiar with the borough and state DEC procedures and is responsible for contacting the appropriate officials should a spill or other threat to the public drinking water source occur.

During normal business hours, call:

Central Area	269-3063
Northern Area	451-2121
Southeast Area	465-5340

Outside normal business hours, call 1-800-478-9300.

D. Emergency Procedures

Briefly describe the procedures for shutting down and isolating the source well from the water supply distribution and storage system. Important valves are located as shown in Appendix C.

Under ideal conditions, the system can operate without the well by using water from another well or from a water storage tank for approximately **24 hours**.

E. Communication Plan

The nature of the public drinking water system should allow the well to be isolated from the distribution system in the event of a spill in Zone A of the Wellhead Protection Area that threatens the source water quality. If it is determined that the source water was exposed to a contaminant, the well will remain off-line until sampling proves the water to be safe, and an evaluation done in cooperation with the Alaska Department of Environmental Conservation is completed.

In the event that an emergency has resulted in an interruption of water service, City of Greenville and Greenville Water Utility staff will telephone each customer explaining the situation and giving instructions on water use during the interruption. Utility billing records will be used for contact phone numbers. A notice will also air on the local radio station at regular intervals.

F. Emergency and Alternate Water Sources

The following is general in nature. You should consider what real options would be available to you today if a contamination threat actually happens and then tailor this section to those options.

Some public water systems have inactive wells that may be used in an emergency. If available, describe how an inactive well might be returned to service. Generally, an inactive well will need to be flushed, disinfected, flushed again, and shown to be free of bacteria, and below the nitrate MCL by sampling to be brought into service. A Health Advisory would be in effect until the sample results were available. If the well were in use for more than two weeks, full sampling would need to occur to ensure compliance with the standards established by the SDWA.

If you plan to use a water hauler to provide an alternate source of water, please complete the following section:

If the well is out of service for more than **24 hours**, an emergency supply of water may need to be arranged. The short-term plan is to haul water using a DEC approved water hauler from a DEC approved water source. Should this be necessary, a hauler will need to be contracted and a short-term plan relating to the source water and disinfection requirements will be submitted to DEC, Drinking Water and Wastewater Program for approval.

Greenville Water Utility has a contract with the ABC Water Company to provide temporary hauled water in the event that a disruption of water service occurs. The hauled water would be stored in Greenville Water Utility's existing water storage tank.

Should a total loss of water occur, the services of a design engineer and well driller will need to be retained to assess the options. Plans and specifications for any new well will require DEC, Drinking Water and Wastewater Program review and approval prior to construction.

If a permanent loss of water from the existing primary well occurs, Greenville Water Utility will reactivate the currently abandoned well located at 111 State Street in accordance with all ADEC disinfection and sampling requirements.