

6 WELLHEAD PROTECTION AREA MANAGEMENT STRATEGIES AND IMPLEMENTATION

Management Overview

Without implementation of risk reducing measures or pollution prevention efforts, a local wellhead protection program will not protect the water supply. Management strategies can not be focused until a clearly defined wellhead protection area has been established and specific potential sources of groundwater contamination identified.

Dissemination of the findings of the inventory to the NNEPA and the owners/operators of the facilities and activities constitutes an important implementation component of local wellhead protection programs. A public education outreach program should be tailored to address local needs and situations.

Effective implementation of a local wellhead protection program can be accomplished through existing authorities at the local (Navajo Nation Chapter government) or at the federal level. Because land use control is an essential component of wellhead protection implementation, municipal tools such as inspections, permitting, enforcement, and zoning are important. By exercising mechanisms at the local chapter level, the chapter community serves notice that the local wellhead protection program is an “official” program important to the Navajo Nation people. It sends a clear message that persons responsible for potential contaminant sources within the wellhead protection areas will be accountable in managing their activities/facilities responsibly.

The NNEPA PWSSP is working with EPA’s Office of Groundwater Protection, State organizations, and other Navajo Nation departments to ensure local wellhead protection programs, and inventory data, are integrated into contamination source control measures.

Establishing a Local Wellhead Protection Committee

Some public water systems are owned or operated by private businesses/entities. Some wellhead protection areas lie along Navajo Nation boundaries outside the jurisdiction of the water owner. Land use may be controlled by other communities, counties, states, or tribes. Cooperation from authorities in other jurisdictions is essential for effective protection of the resource. To help resolve multi-jurisdictional issues, the NNEPA PWSSP promotes and encourages the establishment of a local wellhead protection committee. Participants should include jurisdictions with land use controls over the wellhead protection area; public water system(s); local chapter planning governments; regulatory agencies; other tribes; industrial, commercial, and agricultural organizations; and grass root or citizen action groups.

By coordinating the efforts of independent water systems, jurisdictions, and affected parties as the local program evolves, a consensus can develop as to what constitutes an appropriate management program. Coordinating efforts may also provide significant cost savings when delineating and inventorying. Spill response plans and contingency plans also benefit from coordinated integrated planning efforts.

Individual Potential Contaminant Source Management

After conducting an inventory, the public water system owner shall notify potential contaminant sources that they are within a wellhead protection area. Currently regulated potential contaminant sources also need to be reported to the proper local, or NNEPA department. Potential contaminant sources for whom no lead agency can be determined should be identified to both the local jurisdiction and the NNEPA. When available, potential contaminant sources will be given technical assistance on pollution prevention and risk reductions steps to minimize the possibility of causing ground water contamination.¹ Education of owners/operators of potential contaminant sources, and voluntary adoption of Best Management Practices (BMPs) by them, are important first steps in implementing protective measures.

As implementation efforts begin, potential contaminant sources which cannot be effectively managed through education or the voluntary use of BMPs will be identified. As these potential contaminant are identified, the local chapter government with primary jurisdictional responsibility should develop proposed procedures, rules and/or provisions to address protection of the wellhead protection area through the Local Governance Act (LGA)².

Potential contaminant sources for which no responsible agency or program can be identified will be charged to the NNEPA for evaluation and discussion. The NNEPA will appoint a committee to research the question of jurisdiction and present its findings back to the NNEPA. It will also share the results of its research with the agencies which may have jurisdiction.

Developing a Pollution Prevention Program

Identification of potential contaminant sources will be meaningless unless steps are taken to prevent potential threats from becoming actual problems. The NNEPA PWSSP

¹This will be done primarily by the agency with jurisdiction over the potential contaminant source. The NNEPA PWSSP will work with public water systems, other agencies, and potential contaminant sources to identify technical assistance information and aid in its distribution.

²See 26 NNC Navajo Nation Local Governance Act Chapter 1 Navajo Nation Chapters Subchapter 3 Navajo Nation Chapter Governance Section 103 CHAPTER AUTHORITY and Subchapter 7 Navajo Nation Chapter Regulations and Procedure Section 2004 ZONING, COMPREHENSIVE PLAN; LAND USE VARIATIONS

encourages communities to adopt pollution prevention strategies. Pollution prevention is a long-term waste management technique that aims to reduce or eliminate waste at its source. Using data from the potential contaminant source inventory, facilities which can benefit from pollution prevention technical assistance can be targeted.

Management Tools for Local Chapter Governments

Local chapter governments have a key role in implementing local wellhead protection programs. Many potential contaminant sources can only be effectively managed through local land use planning, local performance standards, or other local measures. Such measures may be developed as part of a recommended local ground water management area plan.

The management strategy of a local wellhead protection program should be to establish policies and procedures designed to protect ground water used as public drinking waters. Management options and choices will be defined by several factors including:

- ▶ Size of system (number of connections),
- ▶ Type of system (community, non-community, transient),
- ▶ Vertical travel time,
- ▶ Hydrogeologic setting (vulnerability), and
- ▶ Lack of alternate sources of supply.

Because each water system faces different groundwater threats, implementation issues, and hydrogeologic settings, no single wellhead protection tool or set of tools can be applied universally. Rather, the various tools available for groundwater protection should be evaluated based on the local conditions. There are, however, some management options, both regulatory and non-regulatory, that have proved useful in a variety of settings:

- ▶ Groundwater Monitoring
 - ▶ Household Hazardous Waste Collection
 - ▶ Public Education and Outreach
 - ▶ Site Plan Reviews
 - ▶ Source Prohibitions
 - ▶ Spill Reporting Requirements
 - ▶ Housing/Subdivision Ordinances
 - ▶ Voluntary/Mandatory use of Best Management Practices
 - ▶ Water Conservation Measures
 - ▶ Wellhead Protection Area Boundary signs for transportation corridors
 - ▶ Zoning Ordinances
- An overview of many of these management options is found in **Table 1**, with more detailed coverage presented in the EPA document: *Wellhead Protection: Tools for Local Governments*.

Table 1. Management Tools for Local Navajo Nation Chapter Governments

Best Management Practices. BMPs are voluntary actions that have a long tradition of being used, especially in agriculture. Technical assistance for farmers wishing to apply them is available from local Cooperative Extension and the Natural Resources Conservation Services office.

Bonding. Facilities may be required to post a bond prior to operation in a WHPA. Bond can cover costs associated with spill response or remediation efforts.

Building Codes. Local building codes offer protection through special standards applicable to facilities which are remodeled or constructed in the WHPA. Building codes can also require low flow fixtures, backflow preventers and other design features to conserve and protect ground water.

Contingency Planning. Local governments can develop their own contingency plans for emergency response to spills and for alternate water supply following contamination of the current wellfield.

Design Standards. Design standards typically are regulations that apply to the design and construction of buildings or structures. This tool can be used to ensure that new buildings or structures placed within a WHPA are designed so as not to pose a threat to the water supply.

Ground Water Monitoring. Ground water monitoring includes selecting appropriate sampling sites upgradient of well and developing an ongoing water

quality monitoring program.

Inspection and Testing. Local governments can use their statutory power to require more stringent control of contamination sources within WHPAs.

Operating Standards. Operating standards are regulations that apply to ongoing land-use activities to promote safety or environmental protection. Such standards can minimize the threat to the WHPA from ongoing activities such as the application of agricultural chemicals or the storage and use of hazardous substances.

Public Education. Public education often consists of brochures, pamphlets, or seminars designed to present wellhead area problems and protection efforts. This tool promotes the use of voluntary protection efforts and build public support for a community protection program.

Site Plan Review. Site plan reviews are regulations requiring developers to submit for approval plans for development occurring within a given area. This tool ensures compliance with regulations or other requirements made within the WHPA.

Source Prohibitions. Source prohibitions are regulations that prohibit the presence or use of chemicals or hazardous activities within a given area. Local governments can use restriction on the storage or handling of large quantities of hazardous materials within a WHPA.

Subdivision Ordinances. Subdivision ordinances are applied to land divided into two or more subunits for sale or development. Local governments use this tool to protect WHPAs in which ongoing development is causing contamination.

Training & Demonstration. These programs can complement many regulations. For example, training underground storage tank inspectors and local emergency response teams, or demonstration of agricultural BMPs.

Waste Reduction. Residential hazardous waste management programs can be designed to reduce the quantity of household hazardous waste being disposed of improperly.

Zoning Ordinances. Zoning ordinances typically are comprehensive land-use requirements designed to direct the development of an area. Many local governments have used zoning to restrict or regulate certain land uses within WHPAs.

Zoning Overlay. Overlay zones can be used in conjunction with conventional zoning to create special districts to protect the WHPA. Overlay zones are applied to areas singled out for special protection, and add regulations to those controls already in place. This method helps address “grandfathered” potential contaminant sources within WHPAs.