GROUNDWATER ISSUES

WELLHEAD PROTECTION UNDER THE SAFE DRINKING WATER ACT

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Introduction

Groundwater protection and management is primarily a state responsibility in the United States. The Environmental Protection Agency has been directed by Congress through legislation to primarily focus on specific waste sources and the regulation of those sources to protect groundwater quality. For instance, the Federal Insecticide, Fungicide and Rodentice Act (FIFRA) regulates which pesticides are safe for use in the U.S. and places restrictions on its use through label requirements. Many of these label requirements take into consideration the potential for groundwater contamination.

Another federal statute, the Resource Conservation and Recovery Act (RCRA) has three major components: Subtitle C, regulation of hazardous waste; Subtitle D, regulation of solid wastes; and Subtitle I, regulation of underground storage tanks.

The list of additional federal efforts in groundwater protection is brief (Table 1). Federal-state relationships are shaped in the primary process of state assumption of the federal program requirements. Congress authorizes EPA the lead role for developing the necessary technical data, technical standards, and regulatory framework, while the states have the opportunity to establish their own programs, modeled after the federal requirements. States are usually provided with federal financial assistance to establish and implement their programs. EPA then provides an overview function.

As explained below, the Wellhead Protection Program authorized under the Safe Drinking Water Act, is an anomaly to the typical federal-state environmental regulatory relationship.

Wellhead Protection Overview

Section 1428 of the amendments to the Safe Drinking Water Act (SD WA) requires states to develop Wellhead Protection programs and prepare submissions to EPA by June 19, 1989. The purpose of the program is to protect the public water supply wells from sources of contamination. Unlike most EPA programs which are regulatory in nature and address specific sources of contamination, the WHP program is designed to assist state and local governments in focusing on the resource itself rather than on controlling a limited set of contamination sources via State or federal regulations. The program is established to provide for comprehensive analysis of geology, hydrology, land uses, and institutional arrangements impacting public water supply wells. The focus is to target management controls to the area around the well that affects

Table 1. Existing Federal Ground-Water Protection Programs

Program	Regulations	Activities
Safe Drinking Water Act Underground Injection Control	40 CFR Parts 144 —14 6	Control of injection to groundwater
Safe Drinking Water act UIV Class V	40 CFR Part 148	Control over shallow well injections to aquifers
Safe Drinking Water Act Public Water Supply Program	40 CFR Part	Regulation of State Public Water Supply Programs
Resource Conservation and Recovery Act	40 CFR Part 300	Hazard Ranking System for Uncontrolled Hazardous Substance Releases
RCRA (Subtitle D)	40 CFR Parts 257, 258	Regulations of Solid Waste Disposal Facilities
Toxic Substances Control Act	40 CFR Part 761	Regulation and permitting of Toxic Substances
Federal Insecticide, Fungicide, and Rodenticide Act		Development of State Pesticide Management Strategies
Comprehensive Environment Response, Compensation, and Liability Act	40 CFR Part 300	National Contingency Plan

public water supply wells. All potential sources of groundwater contamination are to be addressed, whether there is a state or federal regulatory requirement for that source or not.

A comprehensive Welihead Protection program comprises several distinct and essential elements. At a minimum, each state's WHP program must:

Specify roles and duties of state agencies, local government entities, and public water suppliers, with respect to the development and implementation of WHP programs;

Delineate the welihead protection area (WHPA) for each welihead, as defined in subsection 1428(e), based on reasonably available hydrogeologic information on groundwater flow, recharge and discharge, and other information the state deems necessary to adequately determine the
WHPA;

Identify sources of contaminants within each WHPA including all potential anthropogenic sources that may have any adverse effect on health;

Develop management approaches which include, as appropriate, technical assistance, financial assistance, implementation of control measures, education, training, and demonstration projects that are used to protect the water supply within WHPAs from such contaminants;

Develop contingency plans for each public water supply system indicating the location and provision of alternate drinking water supplies in the event of well or well-field contamination;

Site new wells properly to maximize yield and minimize potential contamination; and

Ensure public participation by incorporating processes for appropriate involvement in WHP program elements.

Status of State WHP Efforts

Figure 1 identifies those states that have

FIGURE 1

submitted a WHP program or work plan to EPA for review and approval. EPA is currently working with the states on final adjustments to the submissions prior to approval. The WHP program recognizes the many different approaches that could be employed to protect public water supply wells. Also the diverse nature of hydrogeologic settings across the county is recognized, and site specific delineation approaches and management controls of sources of contamination are encouraged.

The findings to date, based upon an initial review of the programs submitted, *is* very encouraging. Most states are linking existing source management programs and requiring higher levels of protection, enforcement, and compliance within Welihead Protection areas. Coordination mechanisms such as memorandum of agreements and interagency steering committees are being formed to organize and direct state WHP efforts.

A number of states are proposing or have recently adopted legislation and regulatory actions for Welihead Protection. For example, Minnesota's 1989 Groundwater Protection Act mandates the State Department of Health to develop WHP rules for public water supply wells. Massachusetts is in the process of promulgating revisions to their Drinking Water regulations to require local water suppliers to conduct groundwater monitoring, delineate WHP areas, perform land use surveys, develop local water resources management plans, and ensure that contingency measures are in effect.

The Future of Welihead Protection

EPA is very encouraged by the enthusiasm with which the states are undertaking WHP. Over the next year state and local governments will be moving forward on finalizing and implementing their WHP efforts. The protection of the public water supply resource through WHP should provide greater safety and less public health threats from sources of groundwater contamination. The flexibility to design a state WHP program to fit the specific institutional and hydrogeologic setting is producing WHP programs that will effectively manage WHP areas from sources of contamination.