



POTENTIAL SOURCES OF CONTAMINATION

Guidance for Developing a Wellhead Protection Program Plan

Michigan Department of Environmental Quality

GOAL

The goal of the contaminant source inventory is to identify existing and potential sources of contamination within the wellhead protection area which might represent a "threat" to the public water supply system (PWSS). A comprehensive knowledge of these "threats" is essential in the development and implementation of effective management and public education strategies within the local wellhead protection program. As a minimum, a local wellhead protection program plan should include a verified list of known sites of environmental contamination and known potential sources of contamination. The program plan should then identify a process for the identification of any remaining potential sources of contamination which lie within the wellhead protection area.

EXISTING SOURCES OF CONTAMINATION

When possible, the agency will provide information regarding existing potential sources of contamination, including known and potential sites of environmental contamination identified in various state programs. This information may include:

- Part 201 of Act 451 Sites of Environmental Contamination, Remediation and Redevelopment Division, MDEQ
- Underground Storage Tank List, Waste and Hazardous Materials Division, MDEQ
- Leaking Underground Storage Tank Sites (LUST list), Remediation and Redevelopment Division, MDEQ
- Oil & Gas Contamination Site List, Geological and Land Management Division, MDEQ
- Hazardous Waste Generators, Waste and Hazardous Materials Division, MDEQ
- Groundwater Discharge Permits, Water Division, MDEQ
- Landfill/Solid Waste Disposal Site List, Waste and Hazardous Materials Division, MDEQ
- Federal National Priority List (Superfund), information from EPA, Region 5

As part of the program plan submittal process, the location of these sites should be verified by communities and a map created which identifies their location within the wellhead protection area.

COMPLETION OF THE CONTAMINANT SOURCE INVENTORY

Not all potential sources of contamination can be identified by the agency. Land use associated with agricultural operations, commercial facilities, manufacturing and industrial facilities, institutional facilities, and utility companies may be considered potential sources of contamination and represent a threat to the PWSS. The local wellhead protection program plan should identify a mechanism for completing and periodically updating the inventory of known and potential sources of contamination.

A number of approaches are available for completing the contaminant source inventory. The approaches vary in detail and accuracy from general surveys of the wellhead protection area to identifying obvious sites of chemical storage, to onsite facility inspections, which identify the type, location, and quantity of chemicals which are present at a site. Activities which should be considered for incorporation into a local contaminant source inventory plan include:

- General surveys of the wellhead protection area to identify land uses and chemical storage which might represent a threat to the public water supply system.
- Review of tax records, property description information, and phone and business directories to identify facilities which are associated with activities where potential contaminants are used and/or handled.
- Interviews with local historians and long-time residents to identify "historic" sites of potential contamination.
- Review of records maintained by the local fire marshal, building inspector, local health department, or other local units of government which might identify facilities that store or handle chemicals.
- Onsite facility inspections.

CONSIDERATIONS IN CONDUCTING A CONTAMINANT SOURCE INVENTORY

A local plan should identify methods for completion of the contaminant source inventory which are reasonable giving due consideration to the local land use activities, related local programs and existing information. Onsite inspections provide the greatest degree of detail in the contaminant source inventory process. However, such inspections may have been completed in conjunction with other local programs by the fire marshal, building inspector, wastewater treatment plant operator, or local health department personnel. Information obtained from these sources may be sufficient to meet the objectives of the contaminant source inventory.

Onsite inspection must also be considered in view of the local political climate. Area business and industry may not be amenable to onsite inspections which they perceive as having possible "regulatory" repercussions. In such instances, door-to-door surveys conducted by area volunteers may be perceived as less threatening. Acceptance of the contaminant source inventory process may be closely tied to public education and the development of a community awareness and acceptance of the wellhead protection concept.

ABANDONED WELLS

Abandoned wells should be considered in the contaminant source inventory in all wellhead protection program plans. Abandoned wells do not represent a "potential source of contamination" in the same manner that the handling or storage of chemicals would. However, when left improperly sealed they can provide a direct conduit into an aquifer through which the introduction of contaminants may occur.

Many PWSSs may obtain a designation as "not vulnerable" through the collection of well water samples and analysis for tritium. Systems which are identified as not vulnerable are at considerably less risk from sources of contamination as a result of the local geology. Frequently, the local geology consists of a thick and impermeable clay aquiclude which will prevent the migration of contaminants into the aquifer. The local wellhead protection program should emphasize maintenance of the aquicludes structural integrity. Since abandoned wells can provide a direct conduit into the aquifer, they represent the single greatest threat as a breach of the aquiclude. Accordingly, the contaminant source inventory for systems which are not vulnerable must place a high priority on the identification of abandoned wells.

Proper closure of identified abandoned wells shall be undertaken.

SUMMARY

The contaminant source inventory is a site specific activity which is very important to the management of a wellhead protection area and will ultimately determine the necessary monitoring requirements for the public water supply system. Each community should consider the method of inventory development which best suit its needs, discuss the methods with the agency and, if necessary, provide the contaminant source inventory as a draft plan and submit it to the agency for review and comment.

