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**BUSINESS BENEFITS
OF
WELLHEAD PROTECTION
Case Studies:**

Dayton, Ohio; Xenia, Ohio; and Pekin, Illinois

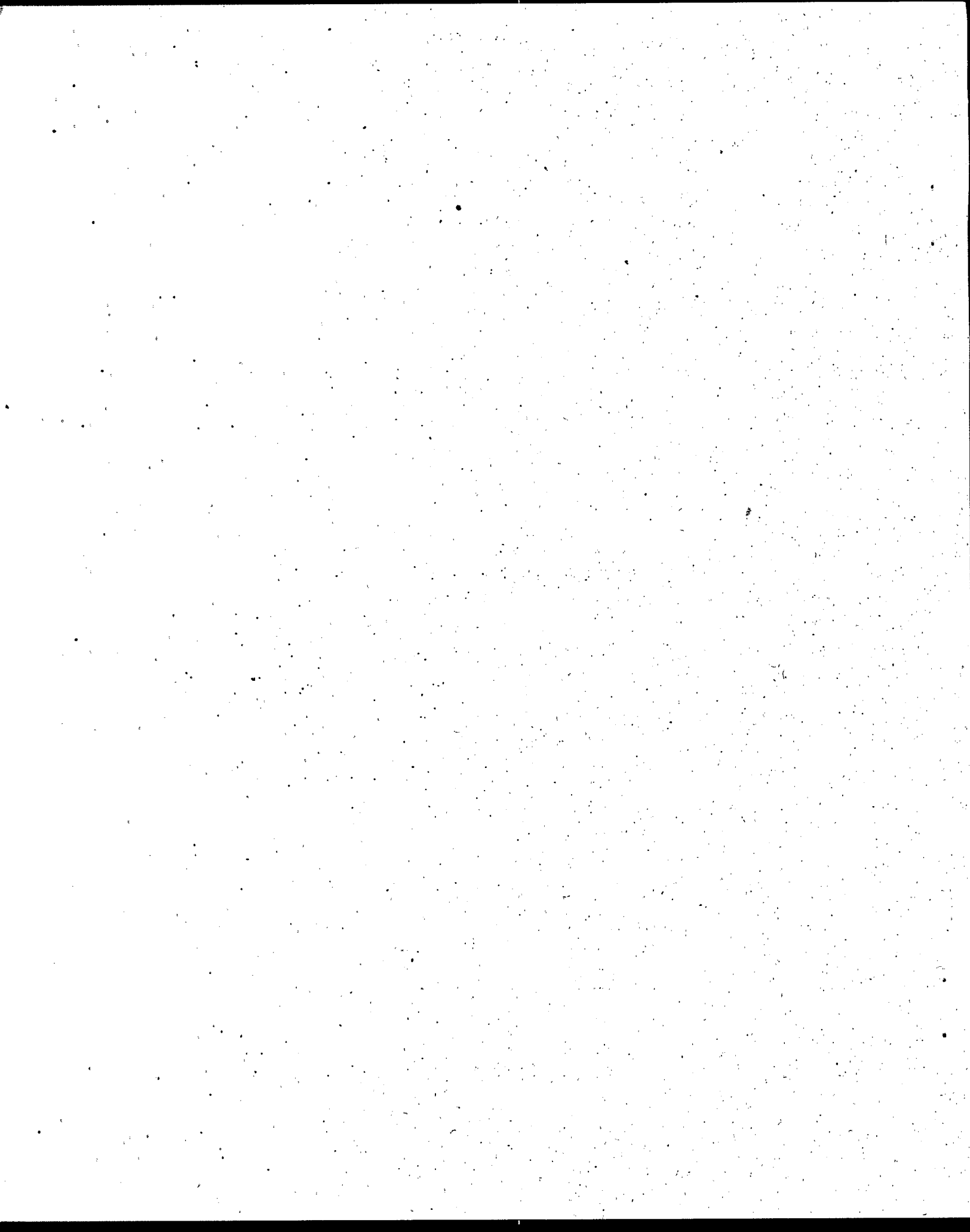
**Source Water Protection
Business and Economic Series
Report No. 1**

**Office of Water
Office of Ground Water and Drinking Water
Ground Water Protection Division**

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October 27, 1995**

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Summary

Business Benefits of Wellhead Protection

Case Studies:

Dayton, Ohio; Xenia, Ohio; and Pekin, Illinois

Business participation is a critical factor for three successful local wellhead and ground water protection programs in Dayton and Xenia, Ohio, and Pekin, Illinois. They offer three different wellhead and ground water protection models but show common themes for business involvement and benefits. The business perspective on the costs and benefits of participating in a local wellhead and ground water protection program in these three communities represents a range of companies: auto manufacturer, sand and gravel dealer, industrial cleaner, chemical products manufacturer, nursery products distributor, ethanol and agricultural feed producer, heavy equipment manufacturer, and land developer. While all the business representatives identified costs, many benefits to them and their communities emerged. Bottom-line benefits highlighted by several companies included: process changes that saved operating costs not previously anticipated; maintaining water quality that kept industrial water treatment costs down; and knowing the exact storage location of chemicals which kept emergency response costs down and allowed better management of existing chemical stocks. All companies indicated that being within the Wellhead Protection Area (WHPA) caused them to be conscious of chemical use and thereby reduced liability from releases through better chemical management. Early involvement by business minimized local regulatory burden and promoted education and protective activities at the same time. Business leaders saw that protecting their communities' water supplies benefitted the community by making it attractive to other companies and potentially helping their own business grow. That is, protecting the local water supply is an important and necessary cost of doing business in these communities.

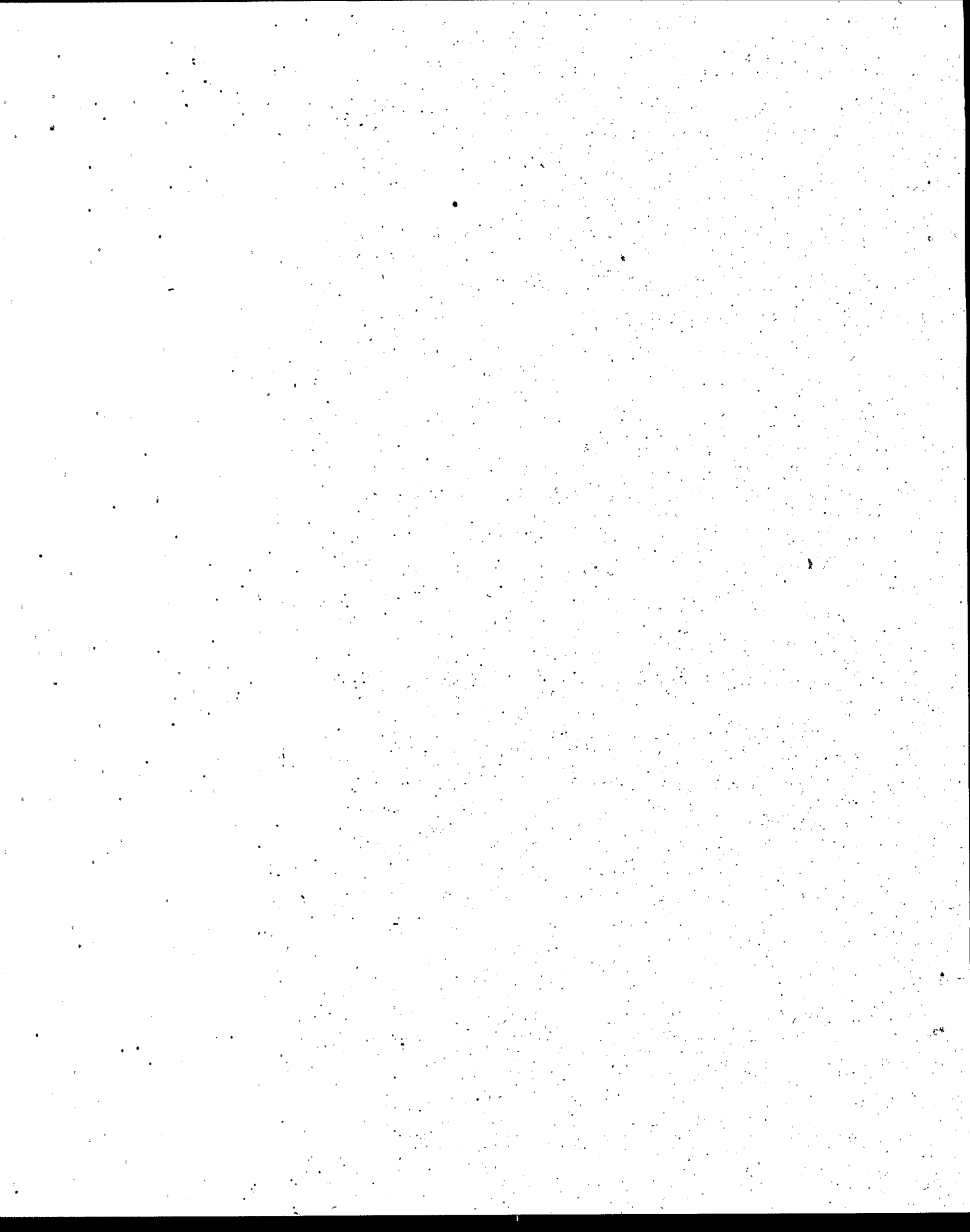
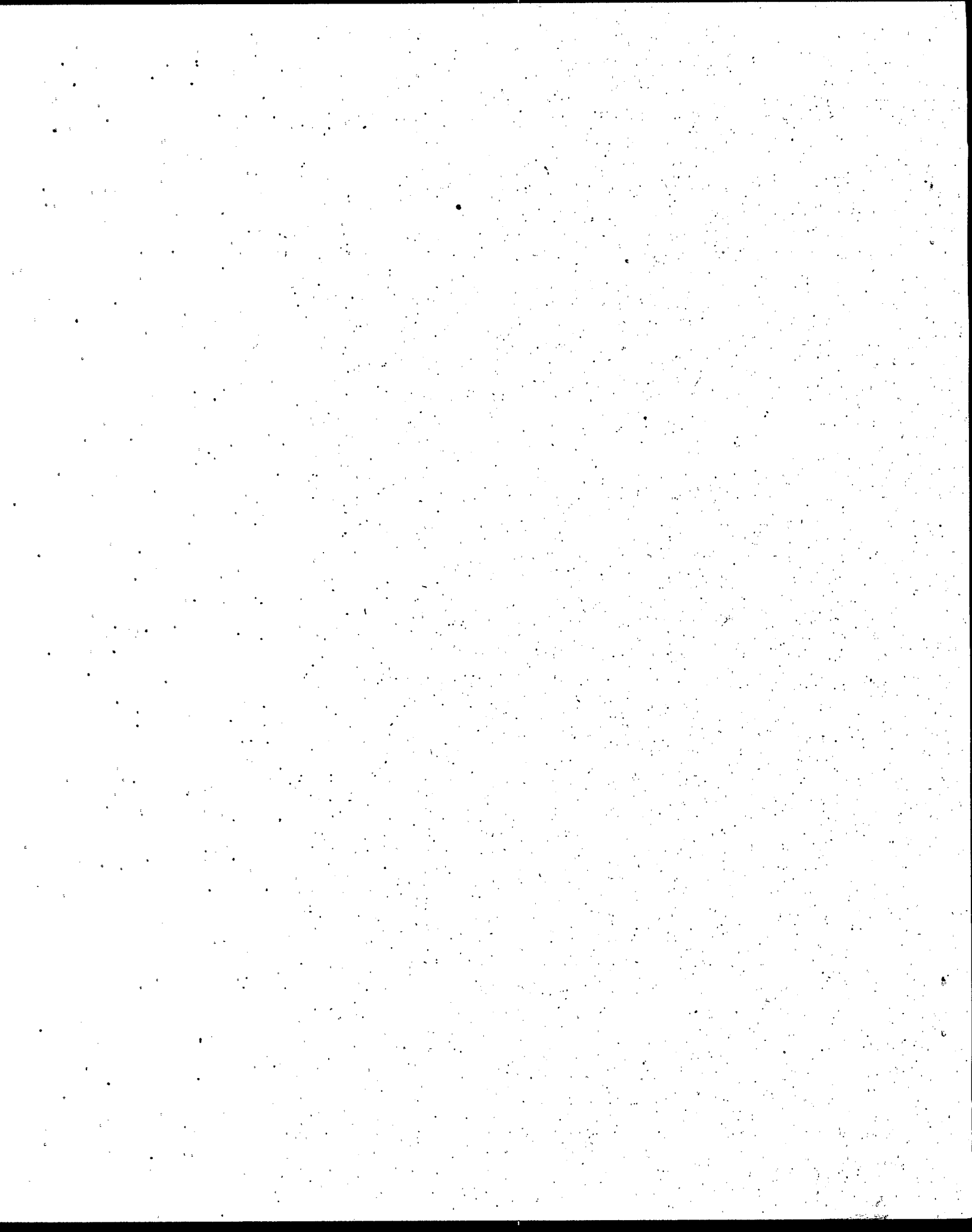


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BUSINESS BENEFITS OF WELLHEAD PROTECTION

Case Studies: Dayton, Ohio; Xenia, Ohio; and Pekin, Illinois

Introduction

Business participation is a critical factor for three successful local wellhead and ground water protection programs in Dayton and Xenia, Ohio, and Pekin, Illinois. They offer three different wellhead and ground water protection models but show common themes for business involvement and benefits. The bottom line is that business and the community benefit from cooperative efforts to make their common water supply clean and safe. The local wellhead and ground water protection programs and related business activities of these three communities are described below with a special focus on business benefits as described by business representatives and leaders themselves. First, the costs are described and then the benefits.

Business Costs and Benefits: An Overview

The business perspective on the costs and benefits of participating in a local wellhead and ground water protection program in these three communities represents a range of companies: auto manufacturer, sand and gravel dealer, industrial cleaner, chemical products manufacturer, nursery products distributor, ethanol and agricultural feed producer, heavy equipment manufacturer, and land developer. While all the business

representatives identified costs, many benefits to them and their communities emerged.

Costs

From a cost standpoint, several companies indicated that they completed protective activities earlier than they would have otherwise because of being in wellhead protection area. Some of these activities include double containment and closer management of chemical inventories. One representative said that process and operational changes were needed and would have been scheduled out over time. One company increased its operating costs by eliminating onsite fueling, but reduced its liability from fuel spills in the process. Another company was concerned about reduced property value, but already had an underground contaminant plume from its operations that it was managing. In Dayton, concern about limited business expansion opportunity was based on the local Well Field Protection Area (WFPA) regulatory requirement that no more than the previously established chemical inventory quantity could be kept on site. Chemicals could be traded within the quantity limits, allowing expansion through closely managed chemical stocks, which required more effort.

Benefits

Bottom-line benefits highlighted by several companies included: process changes that saved operating costs not previously anticipated; maintaining water quality that kept industrial water treatment costs down; and knowing the exact storage location of chemicals which kept emergency response costs down and allowed better management of existing chemical stocks. All companies indicated that being within the Wellhead Protection Area (WHPA) caused them to be conscious of chemical use and thereby reduced liability from releases through better chemical management. The companies had to do a Superfund Amendments Reauthorization Act (SARA) Title III - Community Right-to-Know inventory anyway, so the additional chemical inventorying was not viewed as a significant burden. Being in the WHPA causes companies to evaluate operations and improve efficiency. One company indicated that it had worked with its customers to reduce problem chemical use and cleaning needs, promoting pollution prevention. In one case, obsolete chemicals in stock were sent offsite for proper disposal, further reducing potential liability.

Several companies in Dayton, which has a program to assist in financing best management practice implementation as well as business relocation, indicated that they were taking advantage of "zero interest" funds to install process changes. One company saw a benefit in not being

forced to move from the WHPA. Another took advantage of the 5-year forgivable loan to help the purchaser of its property and allow it to relocate out of the WHPA. In Xenia, business had actually expanded in its Ground Water Resource Protection Area (GRPA).

Every company said that taking actions to protect the community's water supply benefitted everyone in the community and made the community attractive for additional economic development and growth. Establishing the WHPA or GRPA heightened awareness of the need to protect the community water resource, which most took for granted. A significant benefit was the reduced liability for any company handling chemicals because of the greater care needed in doing so. After one company conducted its inventory and realized its risk of certain chemical treatments taking place so close to the city wellfield, it took the opportunity to get out of high liability business.

A universal unquantifiable benefit for all companies was participating at the beginning of the local WHP regulatory process. This early participation made the result of establishing a local WHPA control program more business-friendly and acceptable, reducing regulatory demands from what they might have been. The earlier in the process the information on the need to protect the WHPA, the more positive the business response. In Pekin, where a locally developed educational effort took place before proposing that an ordinance be

developed, no business opposition occurred. The successes and their benefits are further described below.

Dayton, Ohio

In 1984, the detection of trace levels of volatile organic chemicals (VOCs) in Dayton's water supply prompted a local environmental group to conduct a preliminary inventory of the potential sources of contamination. Extensive publication of that inventory motivated the City's elected officials to pursue regional aquifer and local wellhead protection efforts. In 1987, a major fire at a paint distribution warehouse located near several drinking water production wells, served to further highlight the need for protective measures. In 1988, the Great Miami Buried Valley Aquifer System was declared a Sole Source Aquifer under the Federal Safe Drinking Water Act and the City passed ordinances establishing the regulatory aspects of what is now a multi-jurisdictional, internationally-recognized wellfield protection program. Dayton's program served as the model for the wellhead protection element of the 1990 five-county Ground Water Protection Strategy for the Miami Valley Region developed through the Miami Valley Regional Planning Commission. The Dayton Department of Water supplies over 500,000 people. Dayton has over 700 businesses located in its Well Field Protection Areas.

Dayton's program includes limits set by the land owner/manager based on current chemical use for the amount

of chemicals stored on site. Since the sand and gravel aquifer is naturally sensitive to contamination, the Department of Water's ordinance desires to move the chemicals of most risk out of the Wellfield Protection Area (WFPA) over time. The city offers interest free and forgivable loans and grants to business to implement best management practices and to help move large quantity chemical users out and move compatible business in. These financial incentives are funded by the water users, all of whom benefit from a protected water supply. Biennial reporting of chemical stocks is required, slightly different than SARA Title III requirements. Several sites have active remedial efforts ongoing to prevent contamination from reaching city wells. Establishing a good relationship with the local newspaper helped inform all Dayton water users of the need and alternatives for protecting the City's water supply.

Dayton Business Benefits: While one business representative said there was no benefit to her company, she indicated that the actions her company takes benefit the entire community in protecting its water supply. Other interviewees, however, said that changes in production, storage and service processes encouraged by being in the WFPA have helped reduce operating costs and minimize liability in handling and using chemicals. These companies have also benefitted from zero interest loans to implement best management practices. All the business interviewees agreed that protecting the community's drinking

water supply benefitted their companies and the residents of the area. The biggest benefit to companies was the early leadership and participation of the Dayton Chamber of Commerce in working with the City. This participation helped ensure that the Dayton WFPP would not cause businesses to close or move. The City, likewise, wanted to protect the wellfields and encourage business activity at the same time, a challenge to balance economic and environmental interests which the City has met.

Xenia, Ohio

While Xenia (pop. 24,836) is still working on its Wellhead Protection Program (WHPP), it has established a Ground Water Resource Protection Area (GRPA) over a sensitive recharge zone on which half the city sits. Interest in protecting this future water supply was sparked by a proposal for an industrial park in the western half of the city. The city obtained technical support from the Miami Valley Regional Planning Commission, which had also worked with Dayton. Xenia's approach built on existing zoning and local environmental protection authorities. Businesses in the GRPA who use regulated substances beyond a certain quantity must take an inventory of all hazardous materials under the city's Hazardous Substances ordinance and work with the Fire Chief to develop and implement best management practices under the Ground Water Protection Overlay Zoning that may include double containment, diking, emergency response and ground water monitoring,

where necessary. All businesses in the overlay district are required to designate personnel who will become certified to respond for ground water protection and these businesses must develop an emergency response plan. This certification is part of an education ordinance that addresses training for business personnel and public education on ground water protection and establishes a ground water data bank and research policy.

The Xenia Economic Growth Corporation, whose members are business people, was involved at the beginning in responding to different protection proposals developed by the Planning Division. While their reaction was concern for not limiting economic growth, business' early involvement ensured that protective activities could be implemented by business while not reducing growth possibilities. Several businesses have expanded in the GRPA since the overlay zoning has been implemented. Fundamental to future growth, the city has zoned areas for different types of industrial growth based on the sensitivity of the land that would potentially result in contamination of the aquifer depending on overlying land uses and management practices. As far as is known, this is the first GRPA program in Ohio for protecting ground water as a natural resource and as a source of future water supply.

Xenia Business Benefits:
Businesses have not moved out of the GRPA as earlier feared, and business expansion has occurred. Again, businesses have become more aware

of how chemical use and handling can be done in protective ways. As in Dayton, the existing zoning framework was used rather than developing a new layer of local government with which business must work. Companies now include ground water protection as a cost of doing business in Xenia. The biggest benefit according to the chairman of the Xenia Economic Growth Corporation was early and continued involvement of business to ensure that the future water supply could be protected along with business interests.

Pekin, Illinois

In 1991, the Illinois Environmental Protection Agency (IEPA) produced the results of a pilot ground water protection needs assessment, as authorized under the Illinois Ground Water Protection Act (IGPA). Pekin (pop. 34,000) was selected for this pilot initiative primarily because of being located in one of three Priority Ground Water Protection Planning Regions, established pursuant to the IGPA. The Department of Energy and Natural Resources (DENR) prepared a statewide Potential for Aquifer Recharge Map specifically for the purpose of establishing a Regional Ground Water Protection Planning Program.

The Central Regional Ground Water Protection Planning Committee, established under the IGPA, provided a forum to the IEPA to publicly present the findings of the Pekin Needs Assessment

and its recommendations. To assist Pekin in developing a ground water protection program, the Central Committee established the Pekin Education Committee comprised of citizens, business, and city leaders. Their charge was to facilitate education of business and the general public and to develop a proposed ordinance to provide the necessary ground water protection requirements described by the Needs assessment and additional measures identified by the Pekin Committee.

Education had two parts: First, a primary school education program to teach students the importance of water supply protection. Second, a series of workshops for residents and business in proximity to the delineated areas to inform them about drinking water supply protection measures and obtain input on the direction of local protection efforts. The Illinois Department of Natural Resources's Hazardous Waste Research and Information Center provided the pollution prevention component to the workshops and provided additional assistance to individual businesses.

Concurrently, the Pekin Education Committee provided the focus to draft the proposed ground water protection ordinance for the City of Pekin. After approximately one year of work on the ordinance, it was presented to the city council at a public hearing and subsequently adopted. Its provisions include an overlay zone for the drinking water protection areas (building on existing zoning authorities

that residents and business already understood), information to existing businesses on best management practices, and permit requirements for new businesses and those expanding floor space by more the 50 percent.

The overall effort, initiated in February, 1994, was completed in July, 1995, with adoption of the ordinance. Protection programs will continue under the Pekin Committee in conjunction with the nationally recognized Ground Water Guardian Program of the National Ground Water Foundation (headquartered in Lincoln, Nebraska).

Pekin Business Benefits:
Business representatives reported no business opposition to the Pekin ordinance. Companies realized that a clean, safe water supply was vital to their business and future growth. The President and CEO of a large ethanol and agricultural feed processing company said that his company benefits directly because it relies on large volumes of reliable quality water. The director of the Chamber of Commerce indicated that they see the "Pekin Protected Water Supply" as a marketing tool for the community to expand business and attract companies there. If the water supplier does not have to install expensive treatment, water costs to business are kept low.

Special Note: Pekin's water supplier is a privately owned utility. The WHPP will help keep costs low since less investment in treatment technology will be needed, and therefore, lower operating costs will continue.

Conclusions

Several key steps emerge from the experience of these three cities that may help other communities in obtaining business support to protect their drinking water supplies:

1. Involve business at the earliest time in developing a community drinking water protection program; using existing business networks, such as the local Chamber of Commerce, has proven effective
2. Leave all options open on any final approach (i.e., do not develop a range of options or identify a particular approach) until all major stakeholders - residents and business - have been informed of protection needs (e.g., geologic and hydrologic conditions, potential for contamination, areas supplying water to wells, etc.)
3. Use various education and information mechanisms to reach all major stakeholders early before options are identified and decisions on local response are made; one reference on such mechanisms is "Suggestions for State and Local Ground Water Protection Programs - Outreach and Education Efforts to Encourage Business and Public Involvement in Ground Water Protection," Urban Institute (E. Worley, H.P. Hatry, E.B. Liner), 2100 M Street, NW, Fifth Floor,

Washington, D.C. 20037,
Telephone 202-857-8687 (April,
1992)

4. Develop good working relationships with local newspapers to keep residents and business aware of progress in protecting the local drinking water supply
5. Focus on options that encourage and help business protect the water supply
6. Build on existing zoning ordinances and local environmental protection codes already understood by business to minimize regulatory burden

All three communities' business people identified early participation in developing the community's WHPA/GRPA program as a benefit to make the local program responsive to business needs while protecting the water supply. Early involvement by business minimized local regulatory burden and promoted education and protective activities at the same time. Business leaders saw that protecting their communities' water supplies benefitted the community by making it attractive to other companies and potentially helping their own business grow. That is, protecting the local water supply is an important and necessary cost of doing business in these communities.

Participants

Dayton:
General Motors Corporation-Delphi
Chassis Systems Division
DAP, Inc.
VanDyne-Crotty, Inc.
Bur-Tex Corporation
Danis Corporation
Dayton Department of Water
Ohio Environmental Protection Agency

Xenia:
Phillips Sand and Gravel, Inc.
Mayor, City of Xenia
Xenia Planning Department
Miami Valley Regional Planning
Commission

Pekin:
Pekin Energy Company
Caterpillar Inc.
Pekin Area Chamber Of Commerce
Mayor, City of Pekin
Pekin Public Works Department
Illinois Environmental Protection Agency

US Environmental Protection Agency

