CITY OF ST. MARYS, OHIO
DRINKING WATER SOURCE PROTECTION PLAN

Appendix B

Ohio EPA Susceptibility Analysis

ATTACHMENT A

Susceptibility Analysis and Proposed Consumer Confidence Report Language for the City of Saint Marys

SUSCEPTIBILITY ANALYSIS:

A susceptibility analysis evaluates the likelihood that a public water system's source water could become contaminated. The analysis is based on the sensitivity of the aquifer to contamination, the available water quality data for the water system, and the number and types of potential contaminant sources located within the protection area. More information on how Ohio EPA determines a water supply's susceptibility to contamination can be found in Ohio EPA's Ground Water Susceptibility Analysis Process Manual. Copies of the manual are available by contacting Ohio EPA or visiting the following web site: http://www.epa.state.oh.us/ddagw/pdu/swap_procman.html

Susceptibility Rating. The aquifers that supply drinking water to the City of Saint Marys have a moderate susceptibility to contamination. A moderate susceptibility has been provided instead of a low susceptibility because of the types of potential contaminant sources that exist within the City of Saint Marys Protection Areas and because the integrity of the confining layer, within and near the Protection Areas, has been compromised by numerous oil and gas wells that breach the confining layer providing a direct pathway for contaminants to reach the underlying aquifers. In addition to the number and types of potential contaminant sources, the City of Saint Marys susceptibility analysis was also based on the aquifers' geologic sensitivity to contamination (explained in the following paragraph).

Aquifer Sensitivity. The North Wellfield draws water from a confined limestone bedrock aquifer with an average confining layer thickness of 75 feet. The North Wellfield contains two ground water wells that are cased to an average depth of 85 feet.

The South Wellfield draws water from a confined sand and gravel aquifer with an approximate confining layer thickness of 200 feet. The South Wellfield consists of two wells that are cased to an average depth of 346 feet. The regional topography is relatively gently sloping to flat and the soils are clay loam, which are poorly drained and will cause precipitation to pond or run off the ground surface instead of infiltrating to the aquifer.

Water Quality. A review of the City of Saint Marys water quality record currently available in Ohio EPA's drinking water compliance database did not reveal any evidence of chemical contamination at levels of concern in the aquifer.

Please note that this water quality evaluation has some limitations:

1) The data evaluated are mostly from treated water samples, as Ohio EPA's quality requirements are for the water being provided to the public, not the water before treatment. When available, raw (untreated) water sampling results are also evaluated.

2) Sampling results for coliform bacteria and naturally-occurring inorganics (other than arsenic) were not evaluated for this assessment, because they are not a reliable indicator of aquifer contamination. Positive coliform samples are also associated with operation and maintenance problems in the water system's distribution network and may not indicate aquifer contamination.

Potential Contaminant Sources. There are 15 potential contaminant sources within the one year time of travel area of the City of Saint Marys' North Wellfield and one potential contaminant source within the one year time of travel area of the City of Saint Marys' South Wellfield. There are four potential contaminant sources located within the North Wellfield's five year time of travel area and there are no potential contaminant sources located within the South Wellfield's five year time of travel. The types of potential contaminant sources present include 14 industrial and or commercial facilities, auto repair facilities, lime sludge haulers and lagoons, numerous oil and gas wells, gas transmission lines, oil transmission lines, roads, railroads, the Miami and Erie Canal, as well as a cemetery and a water treatment facility. Additionally, there are two facilities located within or near the North Wellfield's one year time of travel that are generators of hazardous waste and one of these facilities is also listed in the Ohio Spills Database, Toxic Release Inventory (TRI), and the Comprehensive Environmental Response Compensation, and Liability Information System (CERCLIS) database.

Protective Strategies. Protective strategies are activities that help protect a drinking water source from becoming contaminated or further contaminated. Implementing these activities can provide a number of long-term benefits, including protecting the health of the consumers; preserving water resources for future generations; avoiding the expense of cleaning up a contaminated water supply or finding alternative sources of water; and preserving or enhancing the economic value of the area by securing an abundant supply of clean water.

Protective strategies that the City of Saint Marys may consider while developing its Drinking Water Source Protection Plan include:

Industrial Facilities: Inform local industrial facilities located within or near the City of Saint Marys Protection Areas of their location with respect to the City's Protection Areas and the importance of practicing Best Management Practices (BMPs) throughout their facility. Industrial facilities should also be made aware that the development of industrial solid waste landfills are prohibited within an Ohio EPA endorsed Drinking Water Source Protection Area for ground water based community public water systems.

Abandoned Oil & Gas Wells: Work with landowners and the Ohio Department of Natural Resources - Division of Mineral Resources Management to ensure that abandoned oil & gas wells that are located within or near the City of Saint Marys Drinking Water Source Protection Areas have been properly closed.

Abandoned Water Wells: Work with landowners to ensure that abandoned/unused water wells located within or near the City's Protection Areas have been properly sealed. Please see the attached guidance titled **"State of Ohio Guidance for Sealing Unused Wells"**.

State, County, and Local Roads: There is a potential for spills along State Route 29, County Roads 116 and 114A, 66A and other local roads. The City of Saint Marys may want to consider contacting the local fire department and local emergency planning agency about the location of the drinking water source protection area, so that strategies can be developed to avoid spilled materials impacting the aquifer. The City of Saint Marys may also consider placing signs on State Route 29 indicating the area is a drinking water protection area (information on how to receive free signs from the Ohio Department of Transportation is attached to this letter). Posting the telephone number of the local fire department near telephones is another protection strategy the City could consider.

Auto Repair Facilities: Waste disposal wells, also known as Class V Underground Injection Control Wells, associated with new automotive facilities are prohibited by law within an Ohio EPA endorsed Drinking Water Source Protection Area. Such wells must be closed no later than January 1, 2007. For additional information on Class V wells please contact Ohio EPA's Division of Drinking and Ground Waters at (614) 644-2752.

Educational Outreach: Informing people who live, work, or own property within your protection area about the benefits of drinking water protection is very important. Although some communities develop their own educational outreach resources, assistance is available at no cost from various agencies. For example, staff from Ohio EPA's Office of Pollution Prevention can visit businesses (free of charge) and provide recommendations on how they can modify their processes, materials and practices to generate less pollution in a cost-effective and technically feasible manner. Homeowners should also be made aware of the potential threat they can pose to the water supply. For more information on available brochures and educational information please contact the Wellhead/Drinking Water Source Protection staff at (614) 644-2752.

Zoning Ordinances: A water protection zoning ordinance is a regulatory control that typically places some restrictions or standards on activities conducted within a specified zone (in this case, the wellhead protection area). Such ordinances enable the municipality to require people who live or work in this area to avoid contaminating the source of the municipality's drinking water. Ordinances can help ensure best management practices are being employed at local businesses and can help reduce the volume of contaminants stored within the protection area. The City of Saint Marys may want to consider developing a zoning overlay that requires specific standards for chemical storage, handling of waste materials, and other source control strategies. Several communities in Ohio have enacted very successful water protection ordinances. Copies can be obtained from the Web at http://www.epa.state.oh.us/ddagw/pdu/swap_ordinances.html or by contacting Craig Smith at (614) 644-3144.