

ORDINANCE 198

AN ORDINANCE WHICH ESTABLISHES OVERLAY ZONING DISTRICTS TO PROTECT THE GROUNDWATER RESOURCES SUPPLYING PUBLIC WATER WELLS AND SPRINGS WHICH SUPPLY PUBLIC WATER TO THE BOROUGH OF EAST PETERSBURG, WITH SOURCE PROHIBITIONS, DESIGN STANDARDS, OPERATING REQUIREMENTS, AND PERMITTING REQUIREMENTS FOR SPECIFIC LAND USES, FACILITIES, AND/OR ACTIVITIES WITHIN WELLHEAD PROTECTION AREAS.

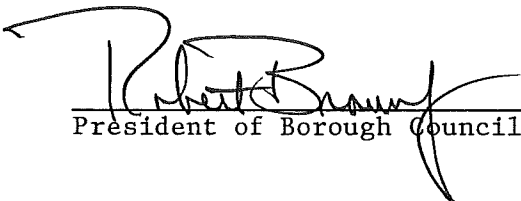
BE IT ORDAINED AND ENACTED by the Borough of East Petersburg, Lancaster County, Commonwealth of Pennsylvania, as follows:

Section 1. A Wellhead Protection Program to include: Appendix "Exhibit I, Phase I Wellhead Protection Overlay Zoning Ordinance", and "Exhibit II, Phase II Wellhead Protection Overlay Zoning Ordinance".

Section 2. Wellhead Protection Program includes but not limited to:

Guidelines for Wellhead Protection Management
Wellhead Protection area Delineations
Source of Potential Contamination
Management Tools for Wellhead Protection
Recommended Program
Implementation
Phase I Wellhead Protection overlay
Phase II Wellhead Protection overlay

DULY ORDAINED AND ENACTED this 4th day of February, 1997, by the Borough Council of the Borough of East Petersburg, Lancaster County, Pennsylvania.



President of Borough Council

Attest James R. Williams
Secretary

Samuel M. Manner II

Mayor

Complete Ordinance can be reviewed at the Borough office, 6040 Main Street daily from 8 AM to 5 PM.

Wellhead Protection Program

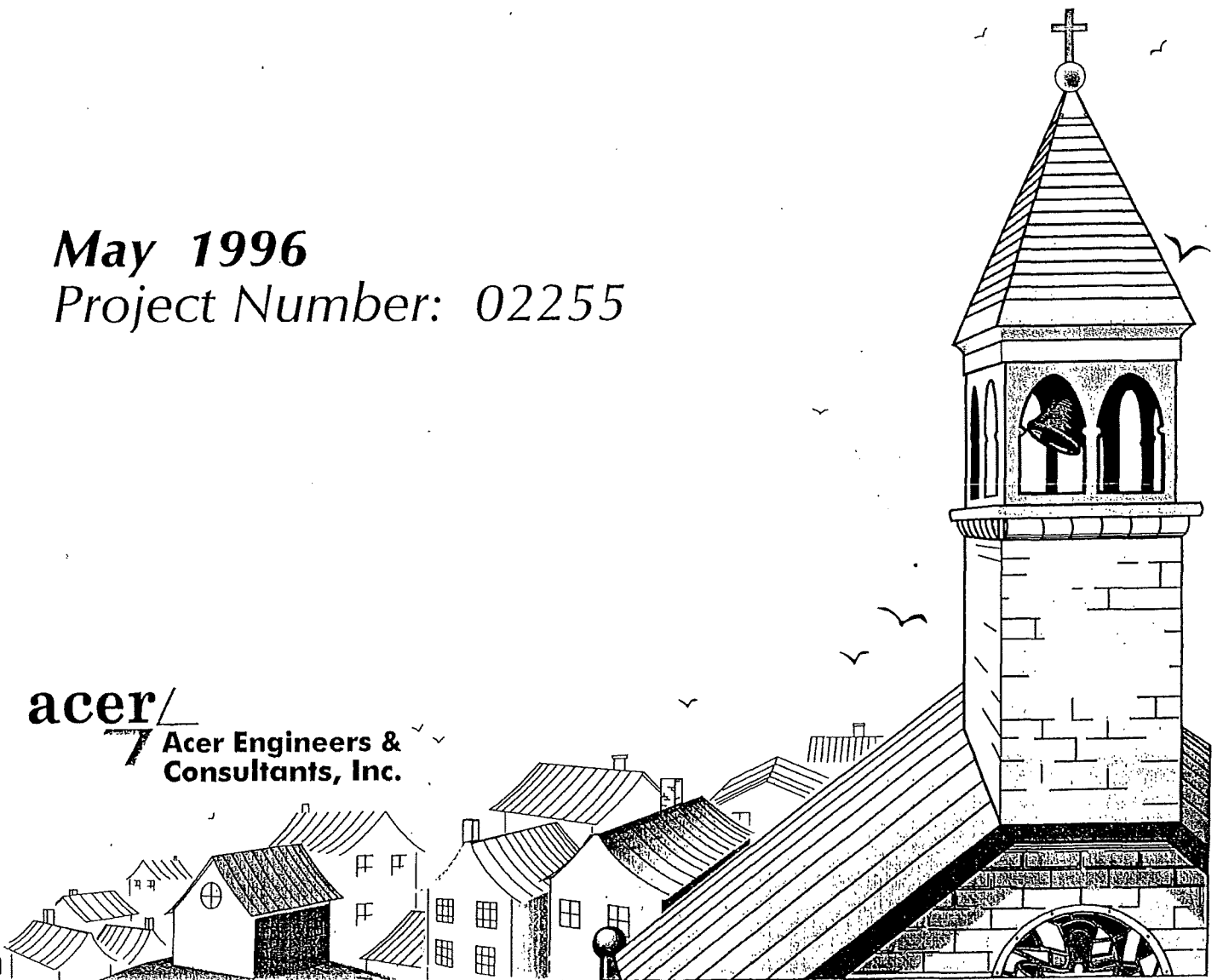
East Petersburg Borough Authority

Lancaster County, Pennsylvania

May 1996

Project Number: 02255

acer/
Acer Engineers &
Consultants, Inc.



WELLHEAD PROTECTION PROGRAM

East Petersburg Borough Authority

May 1996

Project Number 02255

Acer Engineers & Consultants, Inc.
270 Granite Run Drive
Lancaster, PA 17601
(717) 569-7021

INTRODUCTION

The Safe Drinking Water Act (SDWA) was enacted in 1974 to ensure safe drinking water supplies. The SDWA requires the Environmental Protection Agency (EPA) to develop drinking water quality standards to protect the public health. In 1986, amendments were made to the SDWA strengthening provisions for the protection of underground sources of drinking water.

The SDWA Amendments of 1986 include Section 1428, the Wellhead Protection Program, which establishes a legal framework to protect existing wellhead areas of public water supply wells, wellfields, and springs from contamination. A Wellhead Protection Area, or WHPA, is defined as the surface and subsurface area surrounding a water well, wellfield, or spring supplying a public water system through which contaminants are reasonably likely to move toward and reach the water supply.

The Borough of East Petersburg is supplied public water from the Vaughn Well and the Graver Spring. The location of these water supply sources are shown on Figure 1. The Vaughn Well is located in the Borough of East Petersburg and the Graver Spring is located in Manheim Township.

The East Petersburg Borough Authority (EPBA) is concerned with the protection of its water supply and has authorized Acer Engineers & Consultants, Inc. (Acer) to prepare this Wellhead Protection Program.

This report describes the delineation procedures used to define WHPAs and the type of existing and potential sources of contamination within the WHPAs, and develops a management strategy and overlay zoning district with regulatory controls to protect the water supply.

TABLE OF CONTENTS

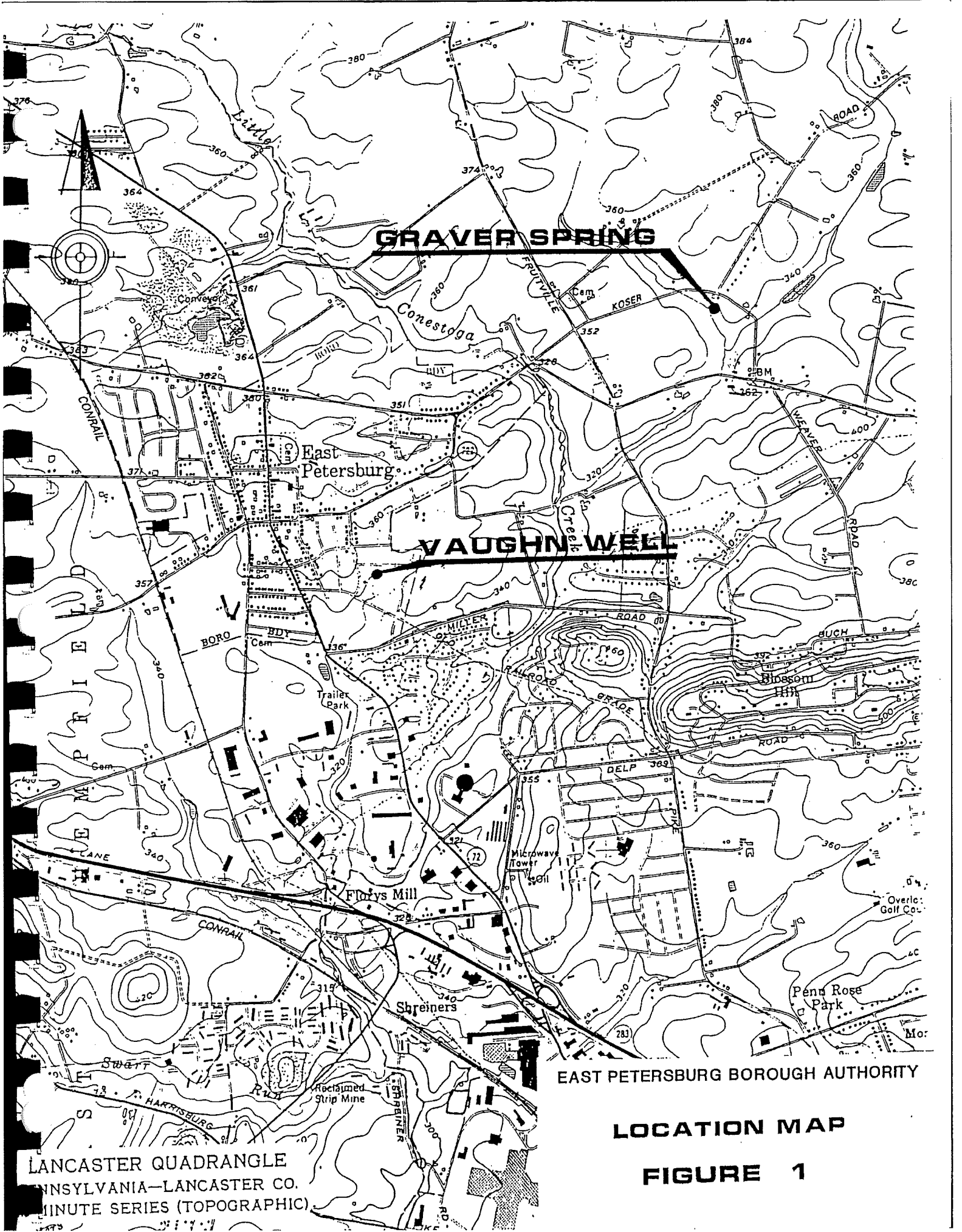
	Page
INTRODUCTION	1
1.0 GUIDELINES FOR WELLHEAD PROTECTION MANAGEMENT	3
1.1 Federal Guidelines	3
1.2 Guidelines of the Commonwealth of Pennsylvania	3
1.3 Zones of Protection	4
1.4 Management Approaches	5
2.0 WELLHEAD PROTECTION AREA DELINEATIONS	6
2.1 Vaughn Well WHPA Delineation	6
2.2 Graver Spring WHPA Delineation	8
3.0 SOURCES OF POTENTIAL CONTAMINATION	9
3.1 Overview of Contamination Sources	9
3.2 Community Inventory of Potential Contamination Sources	11
4.0 MANAGEMENT TOOLS FOR WELLHEAD PROTECTION	16
4.1 Zoning and Land Use Controls	16
4.2 Purchase of Property or Development Rights	17
4.3 Inspection and Monitoring Programs	18
4.4 Public Education	19
4.5 Environmental Management Programs	19
4.6 Contingency and Emergency Response Planning	19
5.0 SUCCESSFUL WELLHEAD PROTECTION PROGRAMS	21
5.1 City of Renton, Washington	21
5.2 Littleton, Massachusetts	23
5.3 Springfield, Missouri	25
6.0 RECOMMENDED PROGRAM	26
6.1 Source Prohibitions	26
6.2 Design Standards	29
6.3 Operating Standards	30
6.4 Management Programs	31
6.5 Program Administration	31
7.0 IMPLEMENTATION	34
7.1 Phase I	34
7.2 Phase II	34

TABLES

TABLE 1	AQUIFER PARAMETERS FOR THE VAUGHN WELL
TABLE 2	LAND USES AND THEIR RELATIVE RISK TO GROUNDWATER

APPENDIX

- Exhibit I - Phase I Wellhead Protection Overlay Zoning Ordinance
- Exhibit II - Phase II Wellhead Protection Overlay Zoning Ordinance



GRAVER SPRING

VAUGHN WELL

East Petersburg

Florys Mill

Shreiners

EAST PETERSBURG BOROUGH AUTHORITY

LOCATION MAP

FIGURE 1

LANCASTER QUADRANGLE
PENNSYLVANIA—LANCASTER CO.
MINUTE SERIES (TOPOGRAPHIC)

1.0 GUIDELINES FOR WELLHEAD PROTECTION MANAGEMENT

1.1 Federal Guidelines

The SDWA Amendments of 1986 and other Federal regulations which govern wellhead protection do not establish specifically what should or should not be regulated as part of local programs. Rather, Federal regulations seek to establish a partnership among Local, State and Federal governments.

State governments are assigned the responsibility to develop a "State-wide" Wellhead Protection Program which must be approved by US EPA. The state-wide program must provide technical guidance for WHPA delineations and establish specific regulations for contamination source controls and management. Some states (i.e., Maryland, New Jersey, and West Virginia) are currently developing programs which will require mandatory wellhead protection for public water systems.

1.2 Guidelines of the Commonwealth of Pennsylvania

The Commonwealth of Pennsylvania recently released regulations which require wellhead protection measures of community systems utilizing new wells, springs, or infiltration galleries. For each new water source, communities must establish a DER approved Zone 1 protection area with a fixed radius of 100-400 feet. In addition, communities are encouraged to establish wellhead protection programs which include the following:

- Organization of a steering committee to oversee the establishment and implementation of the program
- Development of public participation and education activities

- Hydrogeologic delineation of Zone 2 and 3 protection areas which protect the water source from contamination
- Identification of existing and potential sources of contamination within each protection area
- Development and implementation of wellhead protection area management approaches to protect the water supply source from activities that may contaminate the source
- Contingency planning for the provision of alternate water supplies in the event of contamination of a water source and emergency responses to incidents that may impact water supply source quality.
- New water supply source siting provisions to ensure the protection of new water sources.

PA DER does not require that wellhead protection programs be developed for existing public water supply sources, however, PA DER does encourage and support these programs. In addition, PA DER will review the WHPA program provide technical support assisting in WHPA delineations and provide recommendations concerning the management program. Acer contacted PA DER and informed them of the Authority's developing wellhead protection program.

1.3 Zones of Protection

The US EPA and PA DEP recommend that zones of protection be established to regulate activities in the region of the wellhead. Common practice is to establish three zones, each determined by hydrogeologic characteristics of the wellhead, the aquifer that supplies the well, and the region that affects the aquifer.

- Zone 1 is a fixed radius around the well or wellfield that is dependent upon the pump rate. The recommended size of this zone

is 100-400 feet in radius. For this project, a radius of 400 feet was used due to source and aquifer characteristics.

- Zone 2 represents the zone of contribution (ZOC) which is based upon hydrogeologic modeling and is represented by the area affected by a pumping well. The ZOC is defined by EPA as the area surrounding a pumping well that encompasses all areas or features that supply ground water recharge to the well.
- Zone 3 represents the area which contributes surface water and groundwater to the Zone 2 area.

1.4 Management Approaches

The three protection zones are used to establish regulatory and management controls. Zone 1 represents the land area which should be most heavily controlled by the municipality. Less stringent controls should be developed for Zone 2 and Zone 3 areas. A detailed discussion of Management Approaches is provided in Section 4.0.

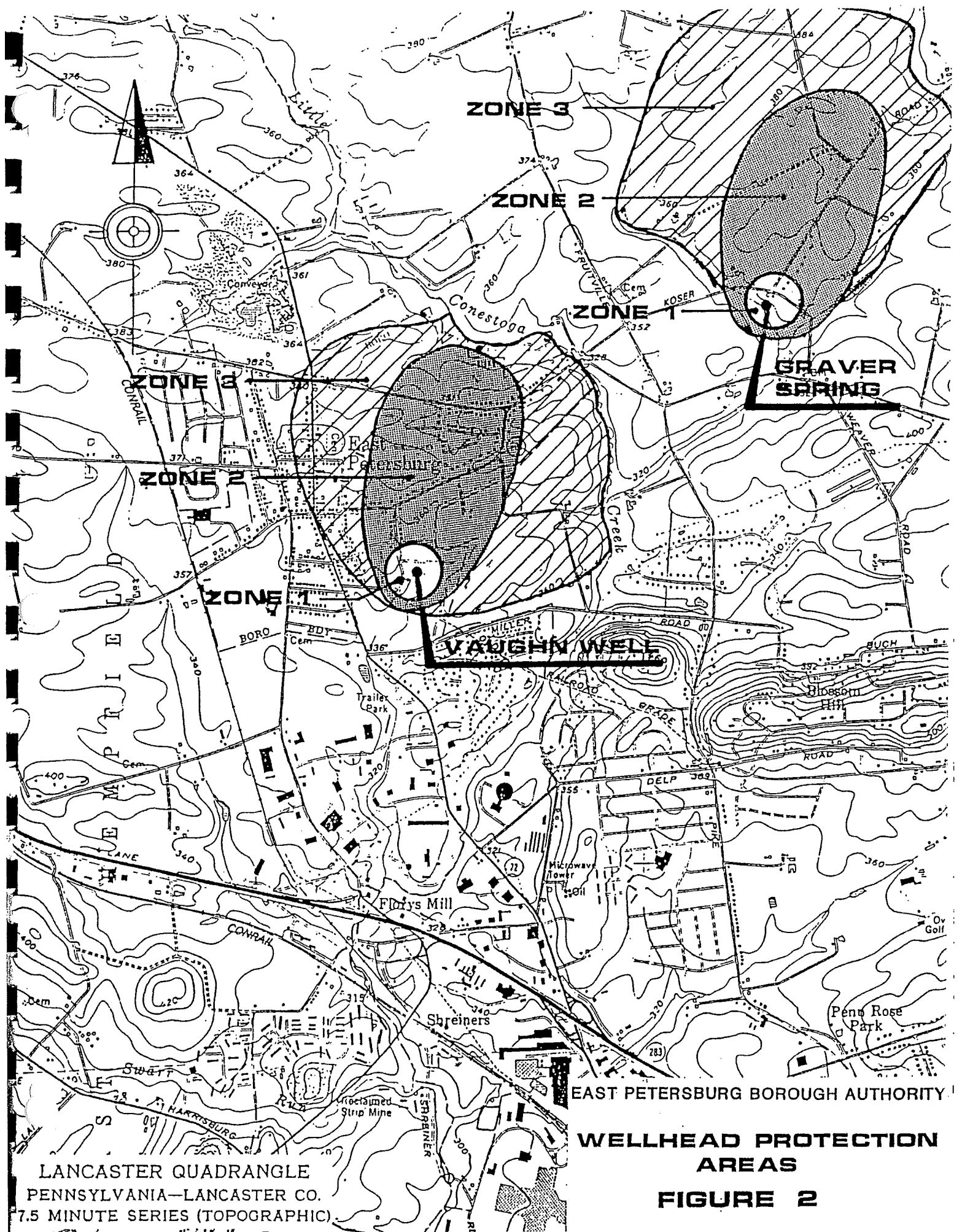
2.0 WELLHEAD PROTECTION AREA DELINEATIONS

The Vaughn Well and Graver Spring draw water from the Cambrian age limestones of the Zooks Corner and Buffalo Springs Formations. An arbitrary fixed radius of 400 feet was applied to the well as Zone 1. Zone 2 was delineated utilizing the semi-analytical, WHPA Flow Model (Version 2.0, U.S. EPA, 1991), based on the MWCAP solution. Zone 3 was mapped hydrogeologically based upon consideration of watershed boundaries and geologic structure.

The WHPA groundwater flow model used for the Zone 2 delineation is a semi-analytical, particle tracking program. The delineation criteria for Zone 2 was established as the 10-year Time-of-Travel (TOT) capture zone. Some of the model's assumptions are partially violated in the hydrogeologic setting which underlies the East Petersburg area as a result of widespread fracturing of the groundwater flow system resulting in conditions that cannot be assumed to be homogeneous or isotropic. Contributing fractures to a well can provide avenues for major contributions of water and relatively rapid movement of contaminants. Zone 3 encompasses the Zone 2 delineations and contributing areas to account for the uncertainties of structural fractures. Figure 2 shows the WHPA delineations for the Vaughn Well and the Graver Spring. A more detailed description of the delineation procedures is described in the following sections.

2.1 Vaughn Well WHPA Delineation

Based upon pumping test records and well driller logs, the Vaughn Well is 400 feet in depth, has a diameter of 8-inches, and has a maximum sustainable yield of 300 gallons per minute (gpm). It should be noted that the average pumping rate of the well is significantly less than the maximum yield of 300 gpm.



ZONE 3

ZONE 2

ZONE 1

ZONE 3

ZONE 2

ZONE 1

VAUGHN WELL

GRAVER SPRING

EAST PETERSBURG BOROUGH AUTHORITY

**WELLHEAD PROTECTION
AREAS**

FIGURE 2

LANCASTER QUADRANGLE
PENNSYLVANIA—LANCASTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

The MWCAP solution of the WHPA Flow Model was used to calculate the Zone 2 protection area. The aquifer parameters used to run the model are presented in Table 1.

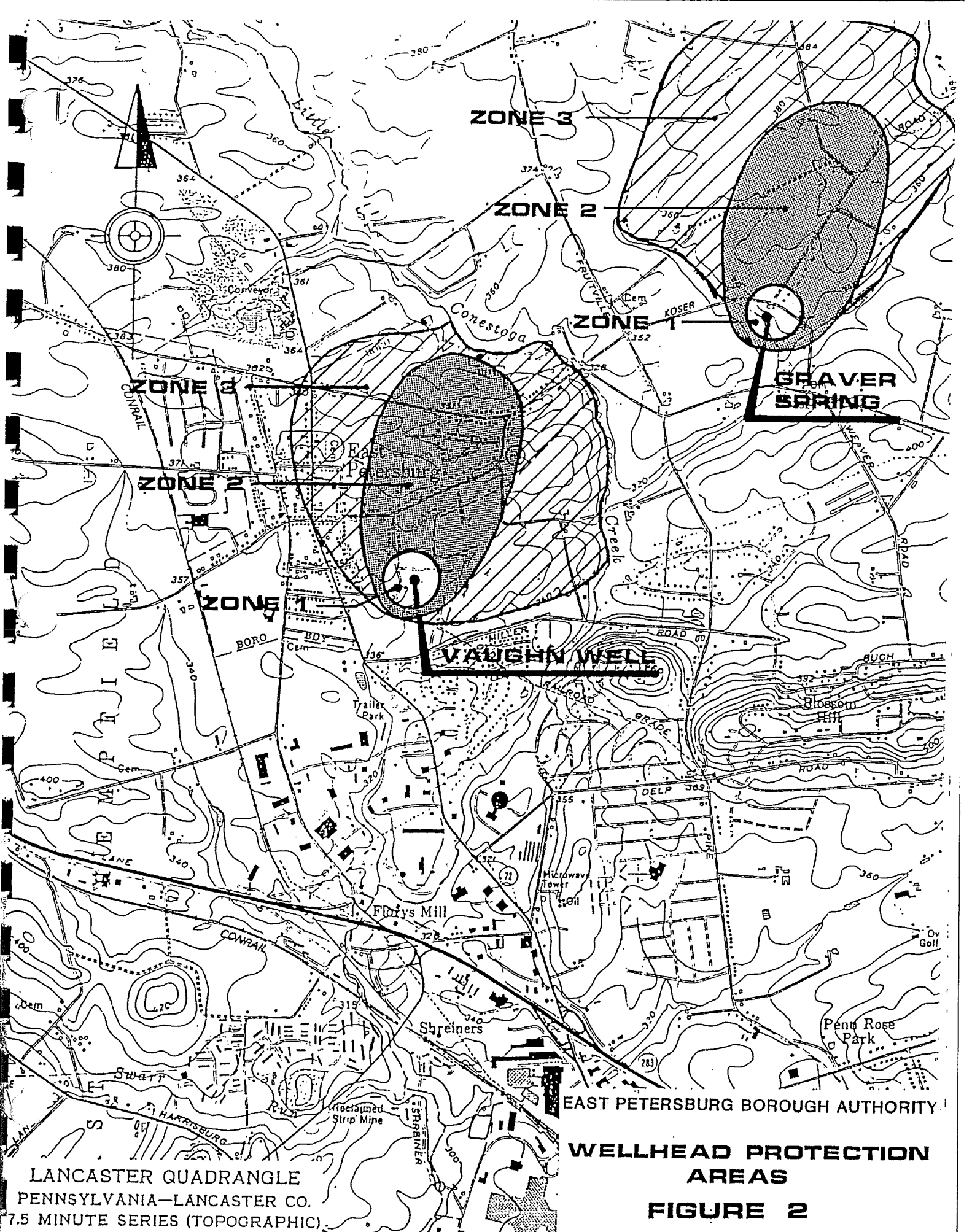
TABLE 1
AQUIFER PARAMETERS
FOR THE VAUGHN WELL

Depth (ft.)	400
Diameter (in.)	8
Well Yield (gpm)	300
Hydraulic Gradient (dimensionless)	0.03
Transmissivity (ft ² /day)	500
Angle of Ambient Flow (degrees)	250
Aquifer Porosity (dimensionless)	0.09
Aquifer Thickness (ft.)	200

These parameters have been determined based upon pumping test records and published information. The model output is the ZOC of the well and represents the Zone 2 protection area. Since Zone 2 area is a topographic high, Zone 3 was expanded to incorporate the Zone 2 area as well as to include structural fractures.

2.2 Graver Spring WHPA Delineation

Delineating the Zone of Contribution for a spring requires a different delineation technique than for a pumping well. A combination of geologic and surface contributing area mapping was utilized to determine the Zone 2 and Zone 3 protection areas.



LANCASTER QUADRANGLE
 PENNSYLVANIA—LANCASTER CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)

EAST PETERSBURG BOROUGH AUTHORITY
**WELLHEAD PROTECTION
 AREAS**
FIGURE 2

TABLE 2

LAND USES AND THEIR RELATIVE RISK TO GROUNDWATER

<p>LOW RISK</p>	<ol style="list-style-type: none"> 1. Land surrounding a well or reservoir, owned by a municipality. 2. Permanent open space dedicated to passive recreation. 3. Federal, state, municipal, private parks and forests. 4. Woodlands managed for forest products. 5. Permanent open space dedicated to active recreation. 6. Field Crops: Pasture, hay, grains, vegetables. 7. Low Density Residential: Lots larger than 2 acres. 8. Churches, municipal offices.
<p>MEDIUM RISK</p>	<ol style="list-style-type: none"> 1. Agricultural Production: Dairy, livestock, poultry, nurseries, orchards, berries. 2. Golf course, quarries. 3. Medium Density Residential: Lots from 1/2 to 1 acre. 4. Institutional Uses: Schools, hospitals, nursing homes, prisons, garages, salt storage, sewage treatment facilities. 5. High Density Housing: Lots smaller than 1/2 acre. 6. Commercial Uses: Limited hazardous material storage.
<p>HIGH RISK</p>	<ol style="list-style-type: none"> 1. Retail Commercial: Gasoline, farm equipment, automotive, sales and service, dry cleaners, photo processor, medical arts, furniture strippers, machine shops, radiator repair, printers, fuel oil distributors. 2. Industrial: All forms of manufacturing and processing, research facilities. 3. Underground storage of chemicals, petroleum. 4. Waste Disposal: Pits, ponds, lagoons, injection wells used for waste disposal, bulky waste and domestic garbage landfills, hazardous waste treatment, storage and disposal sites.

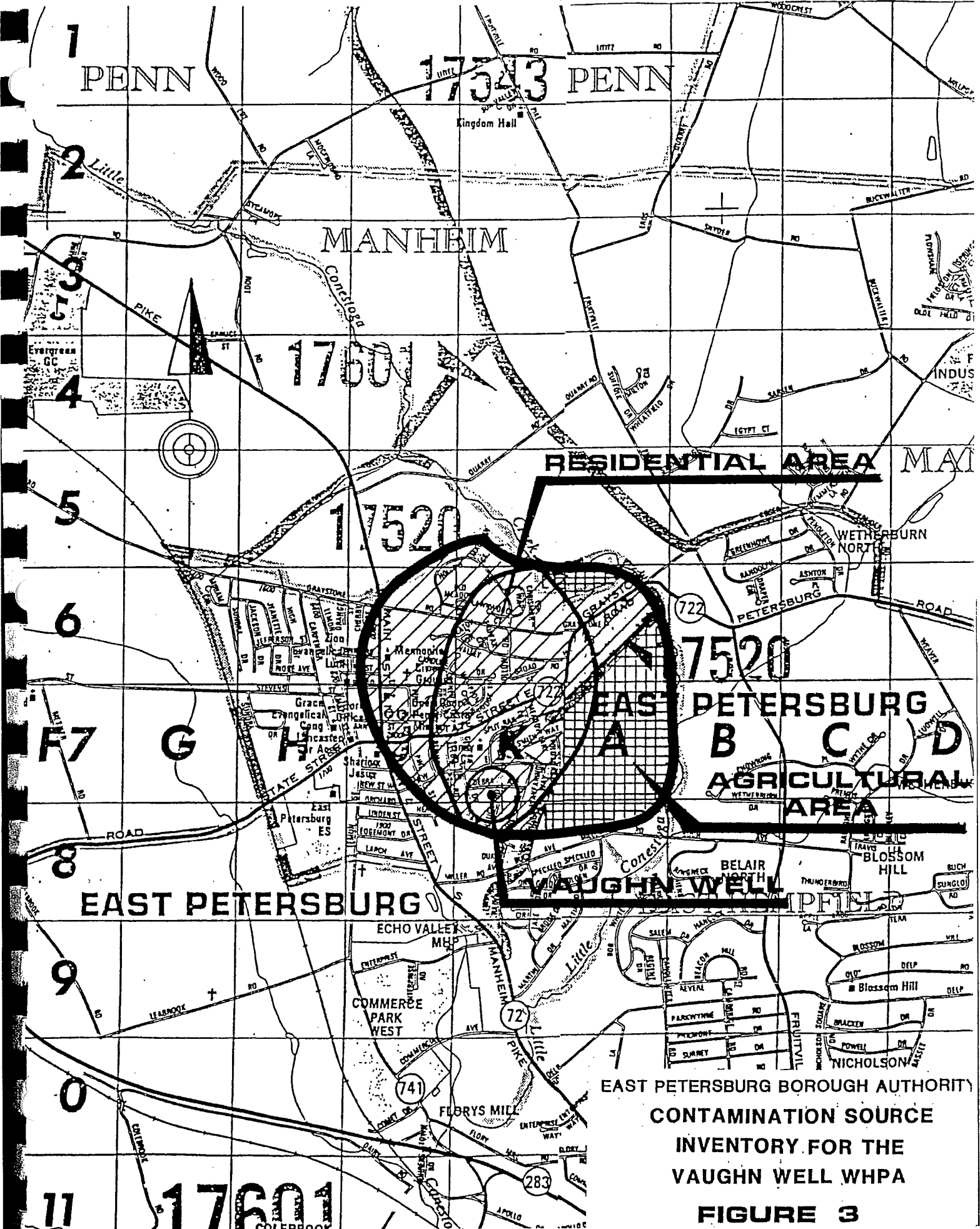
contamination to groundwater resources. The low risk land uses include activities with potential to release small amounts of contamination over large areas and are often referred to as "Non-Point Sources" because the pollution does not originate from a single source (i.e., agricultural practices, non-sewered areas, etc.). Nevertheless, non-point sources of contamination are a concern to the communities because small amounts of contamination released over a long period of time can adversely impact groundwater resources. Common water quality concerns associated with non-point contamination sources include excessive nitrate levels, pesticides, sedimentation, and surface water contamination (i.e., road salts, bacteria, etc.).

3.2 Community Inventory of Potential Contamination Sources

The inventory of potential contamination sources within the WHPAs focuses on general land uses within the WHPAs rather than on specific industrial facilities, storage areas, etc. The purpose of the land use inventory is to provide the Township with a general understanding of potential threats to groundwater and the amount of available undeveloped and vacant land which may represent potential for new contamination sources. This understanding provides a basis for reasonable decisions concerning the type of management tools to be included as part of the EPBA's program to control and manage wellhead protection areas. The following sections provide an overview of existing contamination sources in each of the EPBA's wellhead protection areas.

3.2.1 Vaughn Well WHPA

The Vaughn Well WHPA includes mixed residential and commercial development located within East Petersburg Borough and adjacent areas in East Hempfield Township, as shown in Figure 3. The residential and commercial development located within this WHPA are served by public



EAST PETERSBURG BOROUGH AUTHORITY
 CONTAMINATION SOURCE
 INVENTORY FOR THE
 VAUGHN WELL WHPA
 FIGURE 3

sewer and water facilities. There is also a significant amount of agricultural land in East Hempfield Township.

There are a number of facilities which represent potential sources of contamination including underground fuel oil storage tanks, retail sales and service companies, dry cleaners, garages and service stations, and metalworking companies.

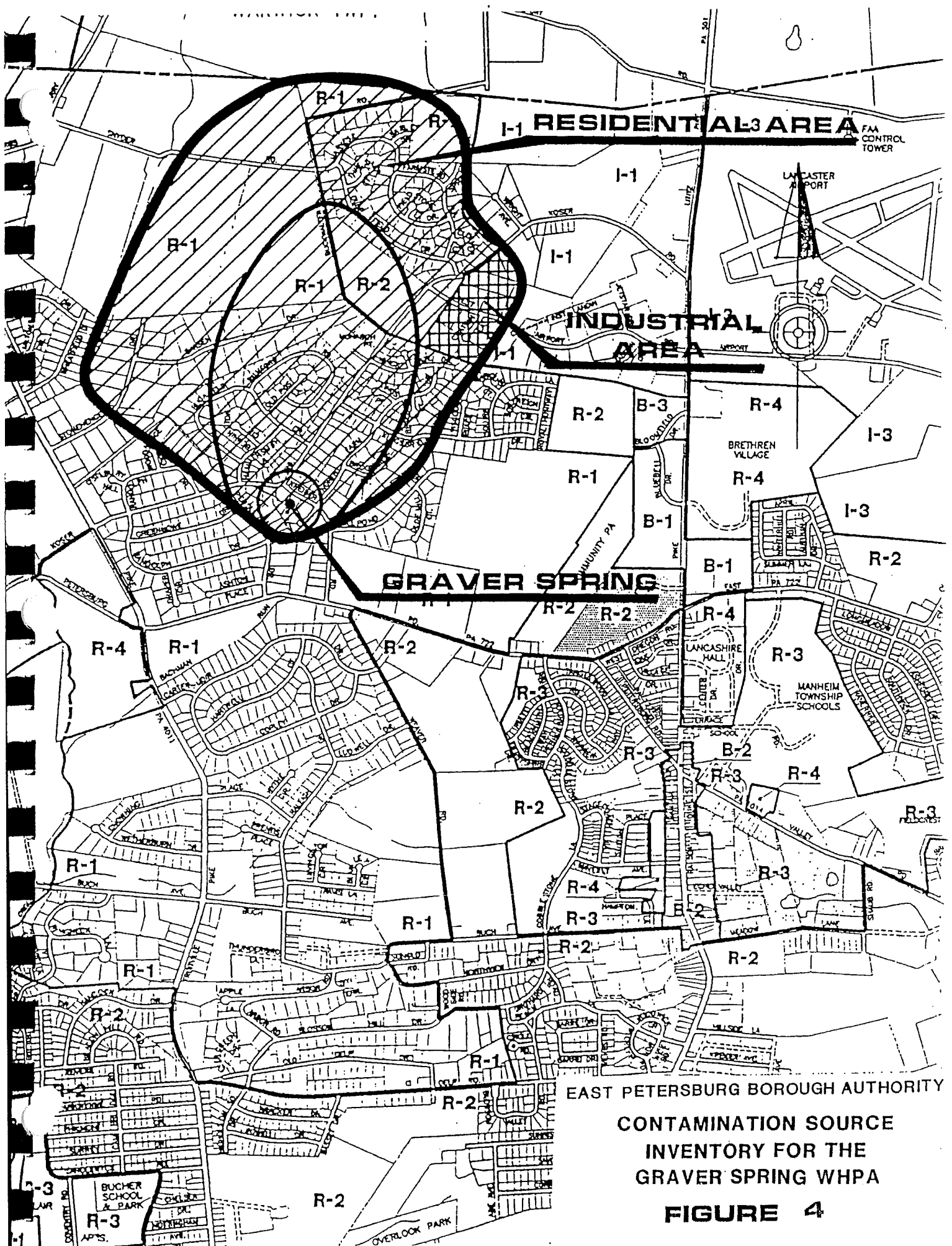
The most significant existing threat to the water supply is the Fulton Bank Operations Center. Prior to Fulton Bank, this facility was owned and operated by Hamilton Watch. Acer is aware of the existence of historical accounts of hazardous waste discharges, and that several hydrogeological studies have been performed which reportedly identified contamination. According to a representative of Fulton Bank, a five-year clean-up project is currently being performed to remove contaminated soil. It is likely that any contaminant plume located at this facility will migrate towards the Vaughn Well.

Other significant threats to the water supply include the agricultural operations in East Hempfield Township and the possibility that this area could be developed. Another concern is groundwater withdrawal by the Hodecker Celery Farm for irrigation purposes. According to the modelling procedure described in Section 2.0, this groundwater withdrawal will interfere with the Vaughn Well. Finally, there is also a significant threat to the water supply from fertilizers, herbicides, and pesticides associated with lawn and garden care.

3.2.2 Graver Spring WHPA

The Graver Spring WHPA includes mixed residential, commercial, and agricultural areas located in Manheim Township, as shown in Figure 4. The majority of the residential and commercial development is served by public sewer and water facilities. However, there are some areas which are served by on-lot wastewater disposal facilities and on-site wells.

Based upon surveys performed by Acer, the most significant source of potential contamination to the Graver Spring is associated with construction activities for new development. Construction activities may cause significant changes in surface water infiltration, and may cause increased turbidity at the Spring. Other sources of contamination include industrial operations in the Flyway Industrial Park and agricultural operations. There is also a significant threat to the water supply from fertilizers, herbicides, and pesticides associated with lawn and garden care.



I-1 RESIDENTIAL AREA

FAA CONTROL TOWER

LANCASTER AIRPORT

INDUSTRIAL AREA

GRAVER SPRING

EAST PETERSBURG BOROUGH AUTHORITY

CONTAMINATION SOURCE
INVENTORY FOR THE
GRAVER SPRING WHPA

FIGURE 4

4.0 MANAGEMENT TOOLS FOR WELLHEAD PROTECTION

The review of existing and potential new contamination sources within the EPBA's wellhead protection areas identified a wide range of threats to the water supply. This section describes management tools which have been used by other communities throughout the country to successfully protect wellhead areas. These management tools include the following:

- Zoning and Land Use Controls
- Purchase of Property or Development Rights
- Groundwater Monitoring
- Public Educational Programs
- Environmental Management Programs
- Contingency and Emergency Response Planning

The purpose of this discussion is to introduce these management tools, explain how they have been used in the past, and how they may assist the EPBA in protecting wellhead areas.

4.1 Zoning and Land Use Controls

Areas which are zoned conservation, agricultural, and low density residential are more compatible with groundwater protection than areas zoned medium and high density residential, commercial, and industrial. Zoning and land use controls are tools to restrict new potential contamination sources from being located within WHPAs by "down zoning" undeveloped areas. Down zoning refers to changing an established zone to a less intensive (i.e., lower allowable development density) use than the originally designated use. For example, undeveloped areas within WHPAs which are zoned commercial or industrial could be down zoned to low density residential or agricultural.

Zoning controls can also be established for wellhead protection through the adoption of an Overlay Zoning District (i.e., a Wellhead Protection District). Overlay zones need not conform to the boundaries of existing zoning districts. Typically, overlay zoning is administered by plotting an opaque map that delineates existing zoning districts and then using transparent maps to delineate the overlay zone.

Overlay zoning districts for wellhead protection is a suitable approach for the communities because it can target zoning changes to WHPAs and allow existing permitted uses outside the overlay zone to continue. In addition to down zoning, Overlay Wellhead Protection Districts can include design and operation standards, source prohibitions, and other land use controls.

Design and operation standards are used to regulate the design, construction, and ongoing operation of various land use activities. Design standards are requirements for physical structures, such as double-walled underground storage tanks. Operation standards are procedures to prevent pollution from routine activities such as limitations on road salting or requiring industrial facilities to implement stormwater management programs. Source prohibitions simply prohibit certain kinds of activities. These activities typically include use, storage, or transportation of hazardous materials and include land uses such as junk yards, landfills, dry cleaners, truck terminals, gas stations, and storage facilities, etc.

4.2 Purchase of Property or Development Rights

Some communities have purchased property to protect wellhead areas. Acquisition of land is probably the surest method for a community to control land use and is one of the reasons why many states encourage municipal ownership of land in Zone 1 protection areas. Typically,

municipalities will build parks and recreation areas in lands acquired for water supply protection purposes.

Some communities have acquired partial interests in properties. Acquisition of partial interests typically involve conservation easements or development rights which prevent land owners from specified actions on the property covered by the easement but permits land owners to continue many other productive uses of their land. An easement for wellhead protection would include prohibitions on certain activities such as hazardous materials storage, junk yards, etc. Easements apply to all subsequent land owners for the full term of the easement, which may be a finite number of years or perpetual.

4.3 Inspection and Monitoring Programs

Groundwater monitoring and inspection programs include direct observation of contamination sources located in WHPAs. Municipalities use these programs to keep a watchful eye on specific contamination sources such as large industrial facilities, landfills, and junk yards.

Inspection programs have been developed which require industries to allow community officials to review the operation of the facility on a regular basis. Some inspection programs are coordinated with efforts to implement community right-to-know requirements. Fire Departments are often involved in such programs so that firefighting plans can be developed which evaluate potential groundwater contamination.

Monitoring programs have been developed which require new facilities constructed within WHPAs to install their own monitoring wells and pay for the costs of the sampling and water testing.

4.4 Public Education

Many communities have developed public education programs aimed at groundwater protection issues. These education programs are used to build support for regulatory programs, such as zoning and land use controls, developed as part of the Wellhead Protection Program. Typically, communities will establish a local advisory committee composed of local business representatives, interest groups, and elected officials. The EPBA may wish to establish such a committee to be responsible for ongoing public education efforts such as periodic newsletters, public meetings, and workshops.

4.5 Environmental Management Programs

There are many environmental management programs which have been developed to address specific pollution concerns. These include used oil collection and recycling programs, household hazardous waste pick-up days, septic system management programs, and manure/nutrient management. These programs are highly successful and can address a wide-range of contamination sources in the WHPAs. Such programs often require substantial amounts of public education and community involvement.

4.6 Contingency and Emergency Response Planning

Although the goal of wellhead protection is to prevent contamination events from occurring, no Wellhead Protection Program can guarantee that such events will not happen. Therefore, effective wellhead protection planning includes a contingency plan to direct a coordinated and timely response to ensure a continued supply of potable water. A comprehensive contingency and emergency response plan:

- Determines who is responsible for the coordination of response actions;
- Identifies alternative water supply sources; and
- Makes arrangements for necessary technical, logistical, and financial resources to implement the contingency program.

Hazardous materials (i.e., fuel oil, gasoline, etc.) transported through WHPAs represent a significant threat to the groundwater. Emergency response plans can be developed which include necessary arrangements with fire departments to clean up spills in a manner that will protect groundwater.

5.0 SUCCESSFUL WELLHEAD PROTECTION PROGRAMS

Federal and State regulations which govern local wellhead protection programs allow for flexibility recognizing that a successful program must be specifically tailored to local needs and conditions. These regulations do not establish specifically what should or should not be regulated as part of local wellhead protection programs. Such decisions are left up to the local municipality.

East Petersburg is a growing suburban area with a wide range of threats to groundwater. Programs to manage and control potential sources of contamination could range from simple public educational programs to more complex programs with operation standards and source prohibitions. While reviewing alternatives for wellhead protection management programs, the EPBA should carefully balance community reaction with the overall effectiveness of the program. In other words, a simple public education program may receive the most favorable community reaction but may not be effective in protecting wellhead areas. A program with stringent controls may provide effective protection; however, if the program does not receive community support, it will be difficult to implement. The following case studies provide examples of successful wellhead protection programs in other communities.

5.1 City of Renton, Washington

The City of Renton, Washington, relies on groundwater for approximately 85 percent of its water supply. Groundwater is withdrawn from the Cedar River aquifer by five wells.

It was a potentially catastrophic incident that prompted the City of Renton to initiate its wellhead protection program. In 1983, a tanker truck carrying petroleum overturned on Interstate 405 within 100 feet of one of

the City's wells. While this incident did not impact groundwater quality, it did force the City of Renton to take action.

The wellhead protection program developed by the City includes an aggressive public education program and land use restrictions implemented through an overlay zoning district.

In an effort to inform the public of the need to protect groundwater quality, the City of Renton prepared a public information leaflet. The leaflet discusses the importance of protecting groundwater quality and presents a series of do's and don'ts for the handling and disposal of potential contaminants (i.e., paints, solvents, lubricating oils, household cleaners, and antifreeze). The City of Renton distributed the leaflet to developers, contractors, engineers, and local citizens.

The Wellhead Protection Ordinance requires property owners who store, handle, use, or produce potential hazardous materials to install one or more monitoring wells and sample groundwater semi-annually.

Property owners are also required to provide containment devices adequate in size to contain all unauthorized releases on-site and to prepare a management plan containing procedures to be followed to prevent, control, collect, and dispose of any release of a regulated substance. Property owners are also required to apply for a wellfield protection operating permit.

The City of Renton drafted a Secondary Containment Ordinance. This ordinance is primarily directed at establishing secondary containment and monitoring requirements for all new underground storage facilities. Specifically, the ordinance:

- Establishes construction standards for new and existing facilities;
and
- Establishes separate monitoring standards for new and existing facilities.

5.2 Littleton, Massachusetts

Five years before the enactment of the Wellhead Protection Program by the SDWA Amendments of 1986, the Town of Littleton researched and adopted a comprehensive wellhead protection program. This program was initiated when the bordering Town of Acton lost approximately seventy percent of its groundwater supply due to organic contamination from industrial development. Littleton is a growing industrial town located 35 miles northwest of Boston with a population of approximately 8,000.

The Town's water system is supplied by a wellfield and three individual wells situated within highly permeable glacial outwash deposits. The WHPAs include three protection zones. Zone 1 is a 400 foot radius from each municipal well. Zone 2 is the upgradient recharge area and Zone 3 includes those portions of the watershed which recharge the Zone 2 areas. The criteria for these protection zones were recommended by the Massachusetts Department of Environmental Protection (DEP) and represents the relative level of necessary management controls to protect the water supply.

A key component of Littleton's successful program is the wellhead protection area monitoring system designed for early warning of contaminant detection and source identification, and overlay zoning districts with land use controls.

The overlay districts incorporate both developed and undeveloped land. Performance criteria were established to regulate land uses that could impact the public water supply. In this way, property owners within the overlay districts are responsible for maintaining groundwater quality at their property lines. Developers are encouraged and sometimes required to adopt better hazardous material management practices. Most pre-existing industrial and commercial facilities located within the overlay districts willingly cooperate with regulatory agencies in protecting supply wells.

Risk assessment criteria were enacted as part of the Zoning Bylaws to screen proposed developments within the overlay districts. High risk facilities such as gasoline stations are excluded from development within the more protective Zone 1 and Zone 2 Overlay Districts. Moderate to low risk facilities are screened for development based on their proposed hazardous materials storage use, handling, and disposal practices. Other considerations in the screening process include property coverage, nutrient loading factors, and proximity to the wellhead.

If low to moderate contamination risk is determined and a development permit is issued, then the developer must demonstrate maintenance of ambient groundwater quality at his downgradient property line. Compliance is proven by certified laboratory analyses and maintained through scheduled sampling of on-site monitoring wells.

To supplement the town's bylaws, additional management techniques are employed to strengthen the protection program. These techniques include: source assessment coupled with industry audits, public education, contingency planning, household hazardous waste collection, and land acquisition. The combined technical and legal framework of Littleton's strategy has led to an effective groundwater protection program.

5.3 Springfield, Missouri

Springfield is located in the southwestern part of Missouri and has a population of approximately 130,000. The city is dependent on both surface and groundwater for its drinking supply. In response to a proposed housing development on the shore of one of the city's reservoirs, a task force was developed to perform hydrogeologic studies, identify protection areas, and make recommendations for a program to manage and control potential sources of contamination.

One of the primary focuses of the Springfield Wellhead Protection Program is public education. Information is provided for residents and businesses located within WHPAs through monthly newsletters that keep the public up-to-date on issues concerning municipal water supplies. Information is provided for the homeowner concerning household activities and effects on water quality. An annual conference on water resources protection is held for the general public featuring State and Local organizations. The conference covers topics concerning public drinking supplies and what homeowners and businesses can do to help avoid potential contamination problems. The committee also makes available a slide presentation concerning the protection of public water supplies to high schools, civic groups, and other interested groups and organizations.

6.0 RECOMMENDED PROGRAM

A mix of land uses and sources of potential contamination exist within the EPBA's wellhead protection areas. There is also a substantial amount of land area that is currently farmed or is vacant. Some of this undeveloped land area is zoned for commercial and residential development. The possibility also exists that zoning requirements could change in the future, thereby allowing for industrial development. Therefore, a successful Wellhead Protection Program must establish regulatory controls and management programs for existing sources of contamination and restrict new contamination sources from being located within the WHPAs.

The Recommended Wellhead Protection Program includes specific source prohibitions for each Zone of Protection consistent with the developing PA DER guidelines. In addition to these source prohibitions, several programs are recommended that are applicable to all three protection zones. These land use controls and management programs are summarized in the following sections.

6.1 Source Prohibitions

As discussed in Section 1.3, Pennsylvania's guidelines for WHPA delineations recommend three zones of protection as the basis of regulatory controls. The most stringent controls should be developed for Zone 1 areas and less stringent controls for Zone 2 and Zone 3 areas.

6.1.1 Zone 1

PA DER recommends direct control by the municipality of the Zone 1 land area through ownership or easements. It is recognized that the acquisition of land and/or easements is not feasible since the areas around the Vaughn Well and Graver Spring have been

- Establishes construction standards for new and existing facilities; and
- Establishes separate monitoring standards for new and existing facilities.

5.2 Littleton, Massachusetts

Five years before the enactment of the Wellhead Protection Program by the SDWA Amendments of 1986, the Town of Littleton researched and adopted a comprehensive wellhead protection program. This program was initiated when the bordering Town of Acton lost approximately seventy percent of its groundwater supply due to organic contamination from industrial development. Littleton is a growing industrial town located 35 miles northwest of Boston with a population of approximately 8,000.

The Town's water system is supplied by a wellfield and three individual wells situated within highly permeable glacial outwash deposits. The WHPAs include three protection zones. Zone 1 is a 400 foot radius from each municipal well. Zone 2 is the upgradient recharge area and Zone 3 includes those portions of the watershed which recharge the Zone 2 areas. The criteria for these protection zones were recommended by the Massachusetts Department of Environmental Protection (DEP) and represents the relative level of necessary management controls to protect the water supply.

A key component of Littleton's successful program is the wellhead protection area monitoring system designed for early warning of contaminant detection and source identification, and overlay zoning districts with land use controls.

The overlay districts incorporate both developed and undeveloped land. Performance criteria were established to regulate land uses that could impact the public water supply. In this way, property owners within the overlay districts are responsible for maintaining groundwater quality at their property lines. Developers are encouraged and sometimes required to adopt better hazardous material management practices. Most pre-existing industrial and commercial facilities located within the overlay districts willingly cooperate with regulatory agencies in protecting supply wells.

Risk assessment criteria were enacted as part of the Zoning Bylaws to screen proposed developments within the overlay districts. High risk facilities such as gasoline stations are excluded from development within the more protective Zone 1 and Zone 2 Overlay Districts. Moderate to low risk facilities are screened for development based on their proposed hazardous materials storage use, handling, and disposal practices. Other considerations in the screening process include property coverage, nutrient loading factors, and proximity to the wellhead.

If low to moderate contamination risk is determined and a development permit is issued, then the developer must demonstrate maintenance of ambient groundwater quality at his downgradient property line. Compliance is proven by certified laboratory analyses and maintained through scheduled sampling of on-site monitoring wells.

To supplement the town's bylaws, additional management techniques are employed to strengthen the protection program. These techniques include: source assessment coupled with industry audits, public education, contingency planning, household hazardous waste collection, and land acquisition. The combined technical and legal framework of Littleton's strategy has led to an effective groundwater protection program.

5.3 Springfield, Missouri

Springfield is located in the southwestern part of Missouri and has a population of approximately 130,000. The city is dependent on both surface and groundwater for its drinking supply. In response to a proposed housing development on the shore of one of the city's reservoirs, a task force was developed to perform hydrogeologic studies, identify protection areas, and make recommendations for a program to manage and control potential sources of contamination.

One of the primary focuses of the Springfield Wellhead Protection Program is public education. Information is provided for residents and businesses located within WHPAs through monthly newsletters that keep the public up-to-date on issues concerning municipal water supplies. Information is provided for the homeowner concerning household activities and effects on water quality. An annual conference on water resources protection is held for the general public featuring State and Local organizations. The conference covers topics concerning public drinking supplies and what homeowners and businesses can do to help avoid potential contamination problems. The committee also makes available a slide presentation concerning the protection of public water supplies to high schools, civic groups, and other interested groups and organizations.

6.0 RECOMMENDED PROGRAM

A mix of land uses and sources of potential contamination exist within the EPBA's wellhead protection areas. There is also a substantial amount of land area that is currently farmed or is vacant. Some of this undeveloped land area is zoned for commercial and residential development. The possibility also exists that zoning requirements could change in the future, thereby allowing for industrial development. Therefore, a successful Wellhead Protection Program must establish regulatory controls and management programs for existing sources of contamination and restrict new contamination sources from being located within the WHPAs.

The Recommended Wellhead Protection Program includes specific source prohibitions for each Zone of Protection consistent with the developing PA DER guidelines. In addition to these source prohibitions, several programs are recommended that are applicable to all three protection zones. These land use controls and management programs are summarized in the following sections.

6.1 Source Prohibitions

As discussed in Section 1.3, Pennsylvania's guidelines for WHPA delineations recommend three zones of protection as the basis of regulatory controls. The most stringent controls should be developed for Zone 1 areas and less stringent controls for Zone 2 and Zone 3 areas.

6.1.1 Zone 1

PA DER recommends direct control by the municipality of the Zone 1 land area through ownership or easements. It is recognized that the acquisition of land and/or easements is not feasible since the areas around the Vaughn Well and Graver Spring have been

developed. Therefore, this program focuses on source prohibition and performance/operation standards.

The recommended Source Prohibitions for Zone 1 includes the following:

- Industrial, commercial, and manufacturing facilities;
- Underground storage tanks;
- Aboveground storage tanks;
- Hazardous material storage, processing, and disposal facilities;
- Road salt stockpiles;
- Golf courses;
- Quarries and mining operations;
- Non-sewered residential development;
- On-site floor drains;
- Land application of wastewater and waste sludges;
- Medical offices, veterinarian clinics, and funeral homes;
- Cemeteries;
- Junk or salvage yards;
- Stormwater detention facilities;
- Sanitary sewer lines and other utilities and pipelines;
- Open burning sites and dumps;
- Construction activities;
- Well drilling;
- Pumping of private wells;
- Construction material stockpiles and debris; and
- Storage and mixing of pesticides and/or fertilizers.

6.1.2 Zone 2

The recommended Source Prohibitions for Zone 2 include the following:

- Underground storage tanks;
- Aboveground storage tanks;
- Hazardous material storage, processing, and disposal facilities;
- Road salt stockpiles;
- Golf courses;
- Quarries and mining operations;
- On-site floor drains;
- Land application of wastewater and waste sludges;
- Medical offices, veterinarian clinics, and funeral homes;
- Cemeteries;
- Junk or salvage yards;
- Open burning sites and dumps;
- Construction activities;
- Well drilling;
- Pumping of private wells;
- Construction material stockpiles and debris; and
- Storage and mixing of pesticides and fertilizers.

6.1.3 Zone 3

The recommended Source Prohibitions for Zone 3 include the following:

- Hazardous material storage, processing, and disposal facilities;

- Road salt stockpiles;
- Quarries and mining operations;
- Non-sewered residential development;
- On-site floor drains;
- Land application of wastewater and waste sludges;
- Junk or salvage yards; and
- Open burning sites and dumps.

6.2 Design Standards

Design standards for new construction within Wellhead Protection Areas are included as part of the Recommended Program. These design standards apply to facilities which represent a reasonable likelihood of discharges of pollutants to the environment, including hazardous material storage areas and waste disposal methods at commercial, industrial, and manufacturing facilities, standards for the construction of underground and aboveground storage tanks, and requirements for containment structures.

The majority of the Recommended Design Standards have already been established by existing Federal and State regulations. Federal regulations include:

- Clean Water Act and Pollution Act of 1990;
- Clean Air Acts of 1970, 1977, and 1990;
- SUPERFUND Amendments and Reauthorization Act (SARA);
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA);
- Resource Conservation and Recovery Act (RCRA); and
- Occupational Safety and Health Act.

Pennsylvania State regulations include:

- Pennsylvania Storage Tank and Spill Prevention Act;
- Pennsylvania Underground Storage Act;
- Rules and Regulations of PA DER.

By including these standards in the Wellhead Protection Program, the communities will be responsible for enforcement of these regulations as well as Federal and State government agencies.

6.3 Operating Standards

The Recommended Program includes exceptions for prohibited land uses, facilities, and/or activities lawfully in existence within the Wellhead Protection Areas prior to the enactment of this program. Operation may continue provided that specific operating standards are achieved.

The Recommended Operating Standards include restrictions on hazardous material storage, Best Management Practices (BMPs) for industrial/commercial facilities and agricultural operations, and application for a Wellhead Protection Area Operating Permit. The application for the Operating Permit will require documentation that the facility is operating in compliance with existing Federal, State, and local regulations.

As with the Design Standards, the majority of the Recommended Operating Standards are required as part of existing Federal and State regulations. Again, by including the standards as part of the Wellhead Protection Program, the EPBA will be able to enforce these regulations.

6.4 Management Programs

Management Programs which are part of the recommended plan include public education and contingency and emergency response planning.

6.4.1 Public Education

The recommended public education program includes mailing of literature to residents and businesses located within WHPAs with information about the EPBA's Groundwater Protection Programs and how they can participate. Also, signs could be placed along roadways and housing developments identifying the WHPAs. The purpose of these signs is to increase public awareness of the need to protect groundwater resources.

6.4.2 Contingency and Emergency Response Planning

East Petersburg Borough Authority should develop a Contingency and Emergency Response Plan. This plan will be coordinated with area Fire Departments and community Right-to-Know Programs. Emphasis will be on the development of a clean-up strategy for hazardous material spills. The communities will also develop joint plans for alternative water supply sources.

6.5 Program Administration

The Recommended Program will be implemented by Overlay Zoning Districts adopted by municipal ordinances. The Borough of East Petersburg, Manheim Township, and East Hempfield Township will be required to adopt the Ordinance. The Program will be administered through existing municipal agencies and staff including the East Petersburg

Borough Council, East Petersburg Borough Authority, Zoning Officers, Zoning Hearing Boards, the Manheim Township Commissioners, and the East Hempfield Township Supervisors. The following responsibilities have been assigned to each of the above agencies and staff:

Borough Council and Township Commissioners/Supervisors

- Adopt Program through enactment of the Wellhead Protection Ordinance.
- Modify Program requirements through passage of amendments to the Wellhead Protection Ordinance.
- Final approval of new land development plans in Wellhead Protection Areas.
- Authorize enforcement actions and penalties.
- Establish fees by resolution.
- Issue notices of violation.

East Petersburg Borough Authority

- Review all proposed land development plans within Wellhead Protection Areas for compliance with the provisions of the Ordinance and make recommendations to the Borough Council and Township Commissioners/Supervisors for approval, disapproval, or approval with modifications.
- Issue and review Wellhead Protection Operating Permits.
- Develop public education programs.
- Develop, review, and update Contingency and Emergency Response Plans.
- Review Hazardous Material Spill Reports.

Zoning Officers

- Issue Cease and Desist Orders for Ordinance violations.
- Perform municipal inspections.

Zoning Hearing Boards

- Grant Ordinance variances for undue hardships.

Whenever a new land development plan located in one of the WHPA Overlay Zoning Districts is presented to the Borough of East Petersburg, Manheim Township, or East Hempfield Township, the land development plan must be reviewed to determine whether or not the Plan meets the requirements of the Overlay Zoning Ordinance.

7.0 IMPLEMENTATION

Community support is essential for the successful implementation of the Wellhead Protection Program. It is Acer's opinion that efforts aimed at preventing new sources of potential contamination from locating within WHPAs are likely to receive more favorable community support than efforts aimed at controlling and managing existing contamination sources. Therefore, the following phased approach is recommended for the implementation of the Wellhead Protection Program.

7.1 Phase I

The Phase I program will be initiated with a comprehensive public education program which will focus on the need for groundwater protection and describe the responsibilities of residents and businesses to comply with the Wellhead Protection Program. Overlay Zoning Districts adopted by Ordinance will be established which will include source prohibitions for new development in each of the Protection Zones. Programs for review of land development plans within the Wellhead Protection Districts will be established including a program for joint review by the three municipalities.

Contingency and Emergency Response Programs will also be developed and coordinated with each municipality. The proposed Ordinance to implement the Phase I Program is presented in Exhibit I in the Appendix.

7.2 Phase II

The Phase II Program will focus on controls on existing sources of contamination established through operating standards implemented and enforced through a municipal Inspection and Permitting Program. This Program will require regulated landuses within the Wellhead Protection

District to submit an application for a Wellhead Protection Operating Permit. The Permit will represent a legally binding Agreement between the landowner and municipality allowing the landowner to continue the existing operation if it can be demonstrated that the operation can comply with specific performance standards and regulations.

Phase II represents the implementation of the Recommended Wellhead Protection Program. The proposed Phase II Ordinance is presented in Exhibit II in the Appendix.

Appendix

EXHIBIT 1

Phase I

Wellhead Protection Overlay

Zoning Ordinance

2. Zone 2 represents the recharge zone of the well based on a 10-year time-of-travel.

3. Zone 3 represents the drainage area that contributes overland flow to the recharge area.

C. The Overlay Zoning Wellhead Protection Area Maps are incorporated and made part of this Ordinance. These Maps shall be filed and maintained by the East Petersburg Borough, Manheim Township, and East Hempfield Township Zoning Officers. Any amendments, additions, or deletions to these Maps shall be effective after approval by the Municipalities.

ARTICLE II. SOURCE PROHIBITIONS

Section 1. Source Prohibitions Zone 1 Protection Areas.

A. The following land uses, facilities, and/or activities shall not be permitted in the Zone 1 protection areas:

1. Industrial, commercial, and manufacturing facilities.
2. Underground storage tanks
3. Aboveground storage tanks
4. Hazardous material storage, processing, and disposal facilities
5. Road salt stockpiles
6. Golf courses
7. Quarries and mining operations
8. Non-sewered residential development
9. On-site floor drains
10. Land application of wastewater and waste sludges
11. Medical offices, veterinarian clinics, and funeral homes
12. Cemeteries
13. Junk or salvage yards
14. Stormwater detention facilities
15. Sanitary sewer lines and other utilities and pipelines
16. Open burning sites and dumps
17. Construction material stockpiles and debris
18. Storage and mixing of pesticides and fertilizers
19. Construction activities
20. Well drilling
21. Pumping of private wells

ORDINANCE NUMBER _____

AN ORDINANCE WHICH ESTABLISHES OVERLAY ZONING DISTRICTS TO PROTECT THE GROUNDWATER RESOURCES SUPPLYING PUBLIC WATER WELLS AND SPRINGS WHICH SUPPLY PUBLIC WATER TO THE BOROUGH OF EAST PETERSBURG, WITH SOURCE PROHIBITIONS, DESIGN STANDARDS, OPERATING REQUIREMENTS, AND PERMITTING REQUIREMENTS FOR SPECIFIC LAND USES, FACILITIES, AND/OR ACTIVITIES WITHIN WELLHEAD PROTECTION AREAS.

BE IT ORDAINED AND ENACTED by the Borough of East Petersburg, the Township of Manheim, and the Township of East Hempfield, Lancaster County, Commonwealth of Pennsylvania, as follows:

ARTICLE I. GENERAL

Section 1. Purpose and Intent.

A. The purpose of this Ordinance is to avoid potential contamination risks of drinking water by establishing source prohibitions, design standards, operating requirements, and permitting requirements of certain land uses, facilities, and activities which involve a reasonable likelihood of discharges of pollutants into or upon surface areas which recharge public water supply wells and springs located in East Petersburg Borough, Manheim Township, and East Hempfield Township. The requirements of this Ordinance comply with Section 1428 of the Federal Safe Drinking Water Act Amendments of 1986 which establishes a legal framework to protect wellhead areas of public water supply wells, wellfields, and springs from sources of contamination. The Municipalities find that the land uses, facilities, and activities identified in this Ordinance represent a reasonable likelihood of discharges of pollutants and that the land use controls and other measures in this Ordinance are necessary to avoid contamination risks of the water supply and to protect the health and well-being of residents and businesses located in East Petersburg Borough.

Section 2. Definitions.

A. EPA refers to the United States Environmental Protection Agency.

B. HAZARDOUS MATERIALS shall be defined as any substance or mixture of such physical, chemical or infectious characteristics as to pose a significant actual or potential hazard to water supplies, or other hazards to human health, if such substance or mixture were discharged to land or waters of the Municipalities. Hazardous materials

include, without limitation, organic and inorganic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalies, and include products such as pesticides, herbicides, petroleum solvents, and thinners, and fertilizers.

C. MUNICIPALITIES refers to the Borough of East Petersburg and the Townships of Manheim and East Hempfield, Lancaster County, Pennsylvania.

D. ON-SITE FLOOR DRAINS shall be defined as drains which are not connected to municipal sewer or stormwater systems and discharge directly to the ground or septic system.

E. OWNER shall be defined as a property owner or his duly authorized agent or attorney, a purchaser, devisee, fiduciary, and any other person having vested or contingent interest in the property of question.

F. PA DER refers to the Pennsylvania Department of Environmental Resources.

G. PERSON shall be defined as any natural person, individual, public or private corporation, firm, association, joint venture, partnership, municipality, government agency, political subdivision, public officer, owner, lessee, tenant or any other entity whatsoever or any combination of such, jointly or severally.

H. RULES AND REGULATIONS OF PA DER shall be defined as official guidance publications of the PA DER with standards and requirements for protection of groundwater resources.

I. WELLHEAD PROTECTION AREA shall be defined as the surface and subsurface area surrounding a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move toward and reach the water well, wellfield, or spring.

J. WELLHEAD PROTECTION AREA OPERATING PERMIT shall be defined as an authorization from the Municipalities to operate a regulated land use, facility, and/or activity in a Wellhead Protection Area which could be potentially detrimental to groundwater quality.

Section 3. Overlay Wellhead Protection Zones.

A. The delineation methodology utilized to determine the Wellhead Protection Areas are based upon analytical methods described in the EPA's "Guidelines for Delineation of Wellhead Protection Areas".

B. The Wellhead Protection Areas include three zones of protection as recommended by the PA DER:

1. Zone 1 is a 400 foot fixed radius around the well.

Section 2. Source Prohibitions Zone 2 Protection Areas.

A. The following land uses, facilities, and/or activities shall not be permitted in the Zone 2 protection areas:

1. Underground storage tanks
2. Aboveground storage tanks
3. Hazardous material storage, processing, and disposal facilities
2. Road salt storage stockpiles
3. Golf courses
4. Quarries and mining operations
5. On-site floor drains
6. Land application of wastewater or waste sludges
7. Medical offices, veterinarian clinics, and funeral homes
8. Cemeteries
9. Junk or salvage yards
10. Open burning sites and dumps
11. Construction material stockpiles and debris
12. Storage and mixing of pesticides
13. Well drilling
14. Pumping of private wells

Section 3. Source Prohibitions Zone 3 Protection Areas.

A. The following land uses, facilities, and/or activities shall not be permitted in the Zone 3 protection areas:

1. Hazardous material storage, processing, and disposal facilities
2. Road salt storage stockpiles
3. Quarries and mining operations
4. On-site floor drains
5. Land application of wastewater or waste sludges
6. Junk or salvage yards
7. Open burning sites and dumps

ARTICLE III. EXCEPTIONS

Section 1. Variance for Existing Land Uses, Facilities, and/or Activities.

A. Any of the land uses, facilities, and/or activities identified in ARTICLE II lawfully in existence within the Wellhead Protection areas prior to the effective date of this ordinance, may continue to exist on the parcel upon which it is located subject to meeting existing federal, state, and local regulations.

B. Variances to the provisions of this ordinance may be granted for undue hardships caused to existing property owners in the Wellhead Protection Areas. Applications for Variances must be presented to the Zoning Hearing Board.

ARTICLE IV. DESIGN STANDARDS

Section 1. Industrial, Commercial, and Manufacturing Facilities.

A. The following design standards apply to the construction of new industrial, commercial, and manufacturing facilities:

1. Facilities which store, process, convey, and/or contain hazardous materials shall be designed in such a manner to prevent discharges of hazardous materials to the environment and meet applicable regulatory requirements (i.e., Occupational Safety and Health Agency (OSHA) standards, Building and Fire Codes, National Institute of Occupational Safety and Health (NIOSH) standards, EPA and DER requirements, etc.)
2. Hazardous materials storage areas shall be fire proof containment structures capable of containing 100 percent of the volume of the largest storage container.
3. No on-site floor drains shall be permitted.
4. Outside storage of hazardous materials in drums shall not be permitted.
5. Dry material storage areas shall not be permitted.
6. On-site disposal of wastewater shall not be permitted.

Section 2. Underground Storage Tanks.

A. The following design standards apply to the construction of new underground storage tanks storing more than 110 gallons of hazardous materials excluding heating oil tanks of 3,000 gallons or less used by homes or businesses:

1. The design and construction of underground storage facilities shall be in accordance with applicable federal and state requirements including the Pennsylvania Underground Storage Act, Pennsylvania Storage Tank and Spill Prevention Act, and the rules and regulations of PA DER.
2. The tank shall be constructed of fiberglass-reinforced plastic, coated and cathodically protected steel, or fiberglass-reinforced plastic composite.

3. The tank and associated tank piping shall provide for secondary containment for release detection purposes which may include double-walled tanks and piping, a concrete vault in which the tank and piping is placed, or an impermeable liner in the excavation zone in which the tank and piping is placed.

4. The tank shall be equipped with spill and overfill prevention equipment and a leak detection system.

4. The tank must be installed by a PA DER certified installer.

Section 3. Aboveground Storage Tanks.

A. The following design standards apply to the construction of new aboveground storage tanks of 250 gallons or more of hazardous materials, excluding farm and municipal tanks holding motor fuel of 1,100 gallons or less and heating oil tanks used to heat homes or businesses:

1. The design and construction of aboveground storage tank shall be in accordance with applicable federal and state regulations.

2. Aboveground storage tanks shall be provided containment facilities meeting the following design requirements:

a. The containment device shall be large enough to contain 100 percent of the volume of the tank, in cases where a single tank is used to store, handle, use, or produce a hazardous material. In cases where multiple tanks are used, the containment device shall be large enough to contain 100 percent of the volume of the largest tank.

b. All containment devices shall be constructed of materials of sufficient thickness, density, and composition to prevent structural weakening of the containment device as a result of contact with any hazardous material and shall be capable of containing any accidental release for at least a period sufficient to allow detection and removal of the material. Provisions shall be made for monitoring, testing, and immediate removal of accumulated precipitation.

3. The design of the tank shall meet applicable technical standards for the specific type and class of tank as set forth in the applicable Underwriters laboratory Standards No. 142 by the American Petroleum Institute (API), by the American Water Works Association (AWWA), or by the Society of Mechanical Engineers (ASME). The tanks shall be fabricated, tested, and installed in accordance with the appropriate codes and standards applicable to the material to be stored therein.

4. The tank shall be designed with monitoring standards consistent with the manufacturer's specifications.

5. The tank shall be tested as required by federal and state codes and standards.
6. The tank and containment area shall be protected by a security fence.

ARTICLE V. ADMINISTRATION AND ENFORCEMENT

Section 1. Subdivision and Land Development Review.

A. All subdivision proposals and other proposed new development plans within the Wellhead Protection areas shall be reviewed for compliance with the provisions of this Ordinance. It shall be the responsibility of the municipality to recommend approval, disapproval, or approval with modifications of the proposed subdivision or development plan.

Section 2. Enforcement Actions and Penalties.

A. The Zoning Officer is authorized to issue cease and desist orders whenever he becomes aware of violations of this ordinance.

Section 3. Notice of Violation.

A. Whenever it is determined that there is a violation of this ordinance, the Notice of Violation issued shall:

1. Specify the violation or violations in writing.
2. Specify the Length of time available to correct the violation.
3. Clearly state any penalties associated with the subject violation.

ARTICLE VI. PUBLIC EDUCATION

Section 1. Public Education and Programs

A. The East Petersburg Borough Authority shall provide for ongoing dissemination of information regarding the Wellhead Protection Program and educate the citizens on their responsibilities to comply with the program requirements. The following shall be included as part of this program:

1. Develop informational literature including pamphlets, brochures, and newsletters describing the requirements of this program.

2. Provide and maintain signs along roadways and in housing developments identifying the Wellhead Protection Areas.
3. Periodic mailings of education literature on groundwater protection issues.

ARTICLE VII. CONTINGENCY AND EMERGENCY RESPONSE PLANNING

Section 1. Contingency Plan.

A. The East Petersburg Borough Authority shall prepare and maintain a Contingency Plan that addresses the following issues:

1. Determines who is responsible for the coordination of response actions.
2. Identifies alternative water supply sources.
3. Makes arrangements for necessary technical, logistical, and financial resources to implement the contingency program.

B. It shall be the responsibility of the Authority to review the Contingency Plan on an annual basis and update the Plan if it is determined to be inadequate.

Section 2. Emergency Response Plan.

A. The East Petersburg Borough Authority shall prepare and maintain an Emergency Response Plan to respond to hazardous material spills which threaten the water supply. This Plan should address the following issues:

1. Develop a detailed clean-up strategy for hazardous material spills assigning specific responsibilities and tasks to Borough/Township Staff, local fire departments, clean-up specialists, and waste disposal firms.
2. Necessary arrangements and service contracts shall be made and renewed on an annual basis.

B. It shall be the responsibility of the Authority to review the Emergency Response Plan on an annual basis and update the Plan if it is determined to be inadequate. The Authority shall also make necessary arrangements and service contracts necessary to implement the Plan.

ARTICLE VIII. FEES

Section 1. Fees Established by Resolution

A. All Fees for Operating Permits and Review of Subdivision and Land Development Plans shall be established by resolutions of the Borough Council/Township Commissioners. Fees established shall be reviewed at least annually and adjusted as required and shall include costs involved with the implementation of this ordinance including Administrative costs and Engineer Review Fees.

ARTICLE IX. SEVERABILITY AND AMENDMENT

Section 1. Severability

A. Should any section, paragraph, sentence, clause, or phrase of this ordinance be declared unconstitutional or invalid for any reason, the remainder of this ordinance shall not be affected thereby.

Section 2. Amendments

A. This ordinance or any part thereof may be amended from time to time in accordance with the procedures as established by law.

ORDAINED AND ENACTED this ___ day of _____, 19___. This ordinance shall become effective on the ___ day of _____, 19___.

EAST PETERSBURG BOROUGH
LANCASTER COUNTY, PENNSYLVANIA

TOWNSHIP OF MANHEIM
LANCASTER COUNTY, PENNSYLVANIA

TOWNSHIP OF EAST HEMPFIELD
LANCASTER COUNTY, PENNSYLVANIA

ATTEST:

Secretary

(SEALED)

EXHIBIT II

Phase II

Wellhead Protection Overlay

Zoning Ordinance

ORDINANCE NUMBER _____

AN ORDINANCE WHICH ESTABLISHES OVERLAY ZONING DISTRICTS TO PROTECT THE GROUNDWATER RESOURCES SUPPLYING PUBLIC WATER WELLS AND SPRINGS WHICH SUPPLY PUBLIC WATER TO THE BOROUGH OF EAST PETERSBURG, WITH SOURCE PROHIBITIONS, DESIGN STANDARDS, OPERATING REQUIREMENTS, AND PERMITTING REQUIREMENTS FOR SPECIFIC LAND USES, FACILITIES, AND/OR ACTIVITIES WITHIN WELLHEAD PROTECTION AREAS.

BE IT ORDAINED AND ENACTED by the Borough of East Petersburg and the Townships of Manheim and East Hempfield, Lancaster County, Commonwealth of Pennsylvania, as follows:

ARTICLE I. GENERAL

Section 1. Purpose and Intent.

A. The purpose of this Ordinance is to avoid potential contamination risks of drinking water by establishing source prohibitions, design standards, operating requirements, and permitting requirements of certain land uses, facilities, and activities which involve a reasonable likelihood of discharges of pollutants into or upon surface areas which recharge public water supply wells and springs located in East Petersburg Borough, Manheim Township, and East Hempfield Township. The requirements of this Ordinance comply with Section 1428 of the Federal Safe Drinking Water Act Amendments of 1986 which establishes a legal framework to protect wellhead areas of public water supply wells, wellfields, and springs from sources of contamination. The Municipalities find that the land uses, facilities, and activities identified in this Ordinance represent a reasonable likelihood of discharges of pollutants and that the land use controls and other measures in this Ordinance are necessary to avoid contamination risks of the water supply and to protect the health and well-being of residents and businesses located in East Petersburg Borough.

Section 2. Definitions.

A. BEST MANAGEMENT PRACTICES (BMPs) shall be defined as a set of standard operating procedures that can be used in a particular industry or commercial activity to limit the threat of groundwater contamination posed by ongoing processes.

B. CONTAINMENT DEVICE shall be defined as a device that is designed to contain an unauthorized release, retain it for cleanup, and prevent released materials from penetrating into the ground.

C. ENVIRONMENTAL AUDIT shall be defined as an evaluation performed by a qualified professional of a facility's compliance with existing federal, state, and local regulations.

D. EPA refers to the United States Environmental Protection Agency.

E. EPA/DER JOINT STORMWATER NPDES PERMIT shall be defined as a permit meeting the requirements of 40 CFR Parts 122, 123, and 124 National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges issued by EPA on November 16, 1990.

F. HAZARDOUS MATERIALS shall be defined as any substance or mixture of such physical, chemical or infectious characteristics as to pose a significant actual or potential hazard to water supplies, or other hazards to human health, if such substance or mixture were discharged to land or waters of the Municipalities. Hazardous materials include, without limitation, organic and inorganic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalies, and include products such as pesticides, herbicides, petroleum solvents, and thinners, and fertilizers.

G. MUNICIPALITIES refers to the Borough of East Petersburg and the Townships of Manheim and East Hempfield, Lancaster County, Pennsylvania.

H. NUTRIENT/MANURE MANAGEMENT PLAN shall be defined as a plan prepared by a qualified professional establishing application rates for manure/fertilizers on agricultural lands to achieve a proper balance of fertilizers and minimize the loss of nutrients.

I. ON-SITE FLOOR DRAINS shall be defined as drains which are not connected to municipal sewer or stormwater systems and discharge directly to the ground or septic system.

J. OWNER shall be defined as a property owner or his duly authorized agent or attorney, a purchaser, devisee, fiduciary, and any other person having vested or contingent interest in the property of question.

K. PA DER refers to the Pennsylvania Department of Environmental Resources.

L. PERSON shall be defined as any natural person, individual, public or private corporation, firm, association, joint venture, partnership, municipality, government agency, political subdivision, public officer, owner, lessee, tenant or any other entity whatsoever or any combination of such, jointly or severally.

M. PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN shall be defined as a plan prepared by a qualified professional meeting the requirements of the PA DER "Guidelines for the Development and Implementation of PPC Plans".

N. RULES AND REGULATIONS OF PA DER shall be defined as official guidance publications of the PA DER with standards and requirements for protection of groundwater resources.

O. SOIL CONSERVATION PLANS shall be defined as a plan prepared by a qualified professional to management surface runoff and control erosion through the best available farming practices on agricultural land.

P. SPILL PREVENTION AND RESPONSE PLAN shall be defined as a plan prepared by a qualified professional describing procedures to clean-up a spill of hazardous materials consistent with the requirements described in Section 901 of the Pennsylvania Storage Tank and Spill Prevention Act.

Q. WELLHEAD PROTECTION AREA shall be defined as the surface and subsurface area surrounding a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move toward and reach the water well, wellfield, or spring.

R. WELLHEAD PROTECTION AREA OPERATING PERMIT shall be defined as an authorization from the Municipalities to operate a regulated land use, facility, and/or activity in a Wellhead Protection Area which could be potentially detrimental to groundwater quality.

Section 3. Overlay Wellhead Protection Zones.

A. The delineation methodology utilized to determine the Wellhead Protection Areas are based upon analytical methods described in the EPA's "Guidelines for Delineation of Wellhead Protection Areas".

B. The Wellhead Protection Areas include three zones of protection as recommended by the PA DER:

1. Zone 1 is a 400 foot fixed radius around the well.
2. Zone 2 represents the recharge zone of the well based on a 10-year time-of-travel.
3. Zone 3 represents the drainage area that contributes overland flow to the recharge area.

C. The Overlay Zoning Wellhead Protection Area Maps are incorporated and made part of this Ordinance. These Maps shall be filed and maintained by the Eas Petersburg Borough, Manheim Township, and East Hempfield Township Zoning Officers. Any amendments, additions, or deletions to these Maps shall be effective after approval by the municipalities.

ARTICLE II. SOURCE PROHIBITIONS

Section 1. Source Prohibitions Zone 1 Protection Areas.

A. The following land uses, facilities, and/or activities shall not be permitted in the Zone 1 protection areas:

1. Industrial, commercial, and manufacturing facilities.
2. Underground storage tanks
3. Aboveground storage tanks
4. Hazardous material storage, processing, and disposal facilities
5. Road salt stockpiles
6. Golf courses
7. Quarries and mining operations
8. Non-sewered residential development
9. On-site floor drains
10. Land application of wastewater and waste sludges
11. Medical offices, veterinarian clinics, and funeral homes
12. Cemeteries
13. Junk or salvage yards
14. Stormwater detention facilities
15. Sanitary sewer lines and other utilities and pipelines
16. Open burning sites and dumps
17. Construction material stockpiles and Debris
18. Storage and mixing of pesticides and fertilizers
19. Construction activities
20. Well drilling
21. Pumping of private wells

Section 2. Source Prohibitions Zone 2 Protection Areas.

A. The following land uses, facilities, and/or activities shall not be permitted in the Zone 2 protection areas:

1. Underground storage tanks
2. Aboveground storage tanks
3. Hazardous material storage, processing, and disposal facilities
2. Road salt storage stockpiles
3. Golf courses
4. Quarries and mining operations
5. On-site floor drains
6. Land application of wastewater or waste sludges
7. Medical offices, veterinarian clinics, and funeral homes
8. Cemeteries
9. Junk or salvage yards
10. Open burning sites and dumps

11. Construction material stockpiles and debris
12. Storage and mixing of pesticides
13. Construction activities

Section 3. Source Prohibitions Zone 3 Protection Areas.

A. The following land uses, facilities, and/or activities shall not be permitted in the Zone 3 protection areas:

1. Hazardous material storage, processing, and disposal facilities
2. Road salt storage stockpiles
3. Quarries and mining operations
4. On-site floor drains
5. Land application of wastewater or waste sludges
6. Junk or salvage yards
7. Open burning sites and dumps

ARTICLE III. EXCEPTIONS

Section 1. Variance for Existing Land Uses, Facilities, and/or Activities.

A. Any of the land uses, facilities, and/or activities identified in ARTICLE II lawfully in existence within the Wellhead Protection areas prior to the effective date of this ordinance, may continue to exist on the parcel upon which it is located subject to meeting existing federal, state, and local regulations including the requirements described in ARTICLE V.

B. Variances to the provisions of this ordinance may be granted for undue hardships caused to existing property owners in the Wellhead Protection Areas. Applications for Variances must be presented to the Zoning Hearing Board.

ARTICLE IV. DESIGN STANDARDS

Section 1. Industrial, Commercial, and Manufacturing Facilities.

A. The following design standards apply to the construction of new industrial, commercial, and manufacturing facilities:

1. Facilities which store, process, convey, and/or contain hazardous materials shall be designed in such a manner to prevent discharges of hazardous materials to the environment and meet applicable regulatory requirements (i.e., Occupational Safety and Health Agency (OSHA) standards, Building and Fire

Codes, National Institute of Occupational Safety and Health (NIOSH) standards, EPA and DER requirements, etc.)

2. Hazardous materials storage areas shall be fire proof containment structures capable of containing 100 percent of the volume of the largest storage container.
3. No on-site floor drains shall be permitted.
4. Outside storage of hazardous materials in drums shall not be permitted.
5. Dry material storage areas shall not be permitted.
6. On-site disposal of wastewater shall not be permitted.
7. The Operating Requirements described in ARTICLE V Section 1 shall be applicable for the operation of new facilities.

Section 2. Underground Storage Tanks.

A. The following design standards apply to the construction of new underground storage tanks storing more than 110 gallons of hazardous materials excluding heating oil tanks of 3,000 gallons or less used by homes or businesses:

1. The design and construction of underground storage facilities shall be in accordance with applicable federal and state requirements including the Pennsylvania Underground Storage Act, Pennsylvania Storage Tank and Spill Prevention Act, and the rules and regulations of PA DER.
2. The tank shall be constructed of fiberglass-reinforced plastic, coated and cathodically protected steel, or fiberglass-reinforced plastic composite.
3. The tank and associated tank piping shall provide for secondary containment for release detection purposes which may include double-walled tanks and piping, a concrete vault in which the tank and piping is placed, or an impermeable liner in the excavation zone in which the tank and piping is placed.
4. The tank shall be equipped with spill and overfill prevention equipment and a leak detection system.
4. The tank must be installed by a PA DER certified installer.
5. The Operating Requirements described in ARTICLE V Section 2 shall be applicable for the operation of new underground storage tanks.

Section 3. Aboveground Storage Tanks.

A. The following design standards apply to the construction of new aboveground storage tanks of 250 gallons or more of hazardous materials, excluding farm and municipal tanks holding motor fuel of 1,100 gallons or less and heating oil tanks used to heat homes or businesses:

1. The design and construction of aboveground storage tank shall be in accordance with applicable federal and state regulations.
2. Aboveground storage tanks shall be provided containment facilities meeting the following design requirements:
 - a. The containment device shall be large enough to contain 100 percent of the volume of the tank, in cases where a single tank is used to store, handle, use, or produce a hazardous material. In cases where multiple tanks are used, the containment device shall be large enough to contain 100 percent of the volume of the largest tank.
 - b. All containment devices shall be constructed of materials of sufficient thickness, density, and composition to prevent structural weakening of the containment device as a result of contact with any hazardous material and shall be capable of containing any accidental release for at least a period sufficient to allow detection and removal of the material. Provisions shall be made for monitoring, testing, and immediate removal of accumulated precipitation.
3. The design of the tank shall meet applicable technical standards for the specific type and class of tank as set forth in the applicable Underwriters laboratory Standards No. 142 by the American Petroleum Institute (API), by the American Water Works Association (AWWA), or by the Society of Mechanical Engineers (ASME). The tanks shall be fabricated, tested, and installed in accordance with the appropriate codes and standards applicable to the material to be stored therein.
4. The tank shall be designed with monitoring standards consistent with the manufacturer's specifications.
5. The tank shall be tested as required by federal and state codes and standards.
6. The tank and containment area shall be protected by a security fence.
7. The Operating Requirements described in ARTICLE V Section 2 shall be applicable for the operation of new aboveground storage tanks.

ARTICLE V. OPERATING REQUIREMENTS

Section 1. Industrial, Commercial, and Manufacturing Facilities.

A. The following operating requirements apply to industrial, Commercial, and Manufacturing Facilities:

1. Owners of facilities shall apply to the Municipalities for a Wellhead Protection Area Operating Permit within one-hundred and eighty (180) days from the effective date of this Ordinance or within ninety (90) days before starting operation of a new facility. All Permits shall be renewed annually thereafter. The Permit Application shall contain:

a. A list of all hazardous materials, including their quantities, which are stored, handled, used, or produced at the facility being permitted. This information should be consistent with public disclosure and reporting requirements in the Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III.

b. A detailed description of the activities conducted at the facility that involve the storage, handling, use, and/or production of hazardous materials. Included with this information shall be a description of the containment structures for hazardous material storage.

c. A detailed description of disposal procedures for hazardous materials and wastes and name, address, and telephone number of any waste haulers used.

d. A site map showing the location of the facility and its property boundaries and the locations where hazardous substances are stored, handled, used, and produced.

e. A Preparedness, Prevention, and Contingency (PPC) Plan consistent with applicable PA DER guidelines and requirements which include procedures to be followed to prevent, control, collect, and dispose of any accidental spill or unauthorized release of a hazardous material.

f. An environmental audit identifying areas of non-compliance with existing federal, state, and local regulations concerning groundwater protection. A discussion of the plans to address areas of non-compliance must be included as part of the audit.

g. Prepare Best Management Practices (BMPs) and procedures for the daily in-house inspection and maintenance of areas where hazardous materials are stored, handled, used, and/or produced. Such procedures shall be in writing and a log shall be kept of all inspection and

maintenance activities. Such logs shall be available for inspection by Township personnel.

h. Provide a copy of EPA/DER Joint Stormwater NPDES permit or describe plans for complying with federal, state, and local stormwater regulations.

Section 2. Underground Storage Tanks

A. The following operating requirements apply to underground storage tanks storing more than 110 gallons of hazardous materials excluding heating oil tanks of 3,000 gallons or less used by homes or businesses:

1. Owners of underground storage tanks shall apply to the Municipalities for a Wellhead Protection Area Operating Permit within one-hundred and eighty (180) days from the effective date of this Ordinance or within ninety (90) days before starting operation of a new tank. All Permits shall be renewed annually thereafter. The Permit Application shall contain:

- a. Description of the tank including age, size, and location at the facility.
- b. Description of the type and quantity of material stored in the tank.
- c. Documentation that the tank is in compliance with existing federal, state, and local regulations including any leak tests performed on the tank.
- d. Documentation that the tank is properly registered as required by federal and state regulations.

2. Leak detection systems shall be checked for evidence of a release at least every 30 days.

3. Existing tanks shall be upgraded as required to meet applicable federal and state regulations.

4. Owners shall meet federal and state requirements for release detection recordkeeping, reporting, and notification.

Section 3. Aboveground Storage Tanks.

A. The following operating requirements apply to aboveground storage tanks of 250 gallons or more of hazardous materials, excluding farm and municipal tanks holding motor fuel of 1,100 gallons or less and heating oil tanks used to heat homes or businesses:

1. Owners of aboveground storage tanks shall apply to the Municipalities for a Wellhead Protection Area Operating Permit within one-hundred and eighty (180) days from the effective date of this Ordinance or within ninety (90) days before starting operation of a new tank. All Permits shall be renewed annually thereafter. The Permit Application shall contain:

- a. Description of the tank including age, size, and location at the facility.
- b. Description of the type and quantity of material stored in the tank.
- c. Documentation that the tank is in compliance with existing federal, state, and local regulations.
- d. Copy of Spill Prevention Response Plan consistent with the requirements of the Pennsylvania Storage Tank and Spill Prevention Act.

2. Existing tanks shall be upgraded as required to meet applicable federal and state regulations.

3. Owners shall meet federal and state requirements for release detection recordkeeping, reporting, and notification.

Section 4. Agricultural Operations.

A. The following operating requirements apply to agricultural land:

1. Owners of lands utilized for agricultural production shall apply to the Municipalities for a Wellhead Protection Area Operating Permit within one-hundred and eighty (180) days from the effective date of this Ordinance or within ninety (90) days before starting agricultural production of new lands. All Permits shall be renewed annually thereafter. The Permit Application shall contain:

- a. The amount of total tillable acres, type of crops, and number and type of livestock raised on the farm.
- b. Nutrient/Manure Management Program in accordance with the standards as published in the Soil Fertility Section of the Penn State Agronomy Guide and in accordance with the PA DER Manure Management Manual.
- c. Soil Conservation Plan prepared by the Soil Conservation Service.
- d. The amount and types of pesticides and fertilizers stored on the farm.

Section 5. Other Regulated Land Uses, Facilities, and/or Activities.

A. The following operating requirements apply to all other land uses, facilities, and/or activities regulated under ARTICLE II Section 1, Section 2, and Section 3 continuing to operate per the Exceptions described in ARTICLE III Section 1.

1. Owners of regulated land uses, facilities, and/or activities shall apply to the Municipalities for a Wellhead Protection Area Operating Permit within one-hundred and eighty (180) days from the effective date of this Ordinance or within ninety (90) days before starting operation of a new regulated land use, facility, and/or activity. All Permits shall be renewed annually thereafter. The Permit Application shall contain:

a. A list of all hazardous materials, including their quantities, which are stored, handled, used, or produced at the facility being permitted. This information should be consistent with public disclosure and reporting requirements in the Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III.

b. A detailed description of the activities conducted at the facility that involve the storage, handling, use, and/or production of hazardous materials. Included with this information shall be a description of the containment structures for hazardous material storage.

c. A detailed description of disposal procedures for hazardous materials and wastes and names, address, and telephone number of any waste haulers used.

d. A site map showing the location of the facility and its property boundaries and the locations where hazardous substances are stored, handled, used, and produced.

e. A Preparedness, Prevention, and Contingency (PPC) Plan consistent with applicable PA DER guidelines and requirements which include procedures to be followed to prevent, control, collect, and dispose of any accidental spill or unauthorized release of a hazardous material.

f. An environmental audit identifying areas of non-compliance with existing federal, state, and local regulations concerning groundwater protection. A discussion of the plans to address areas of non-compliance must be included as part of the audit.

g. Prepare Best Management Practices (BMPs) and procedures for the daily in-house inspection and maintenance of areas where hazardous materials are stored, handled, used, and/or produced. Such procedures shall be in writing and a log shall be kept of all inspection and

maintenance activities. Such logs shall be available for inspection by Borough/Township personnel.

ARTICLE VI. HAZARDOUS MATERIAL SPILLS REPORTING

Section 1. Reporting Requirements for Hazardous Material Spills.

A. The following requirements apply to all spills of hazardous materials at facilities which are not entirely contained and are released to the environment.

1. All spills shall be reported within one (1) hour to the East Petersburg Borough Authority. A written report must be filed within 5 days of the occurrence including the following information:

- a. Name of facility, contact person, and telephone number.
- b. List of type, quantities, and concentration of hazardous substances released.
- c. Method of cleanup
- d. Method of future release prevention or repair.

2. Reporting of spills to the Authority shall not relieve the responsibility of the owner of reporting requirements of other regulatory agencies.

ARTICLE VII. ADMINISTRATION AND ENFORCEMENT

Section 1. Subdivision and Land Development Review.

A. All subdivision proposals and other proposed new development plans within the Wellhead Protection areas shall be reviewed for compliance with the provisions of this Ordinance. It shall be the responsibility of the municipality to recommend approval, disapproval, or approval with modifications of the proposed subdivision or development plan.

Section 2. Wellhead Protection Area Operating Permit Issuance and Review.

A. It shall be the responsibility of the East Petersburg Borough Authority to review Wellhead Protection Area Operating Permit applications for compliance with this ordinance.

B. The Authority shall have the power to issue and deny permits.

C. On an annual basis, the Authority shall review all existing Operating Permits for compliance with this ordinance.

D. When a Hazardous Material Spill Report is received, the Authority shall review the Operating Permit for the facility.

Section 3. Transfer of Operating Permit

A. In the event there is a change of ownership, a new lease, or an assignment of a lease, a sublease, or any other change in regard to the person owning the facility, the Authority shall be notified. Upon payment of the appropriate fee and completion of processing of an application, the Operating Permit shall be transferred.

Section 4. Municipal Inspection.

A. The Operating Permit shall be a legally binding agreement between the Municipalities and owner and shall provide that the Borough/Township shall have the right to:

1. Inspect the facilities and property at any time.
2. Require the owner of a facility to take corrective measures to prevent potential contamination of groundwater and assign the owner reasonable time periods for any necessary action.

Section 5. Enforcement Actions and Penalties.

A. The Zoning Officer is authorized to issue cease and desist orders whenever he becomes aware of violations of this ordinance.

B. If a owner continues to operate without an Operating Permit as required by this Ordinance, the Municipalities may file an action for injunctive relief in the Pennsylvania District Court.

C. All costs for abatement incurred by the Municipalities including engineering and attorney's fees shall be paid by an owner operating in violation of the provisions of this ordinance or the Operating Permit.

Section 6. Notice of Violation.

A. Whenever it is determined that there is a violation of this ordinance, the Notice of Violation issued shall:

1. Specify the violation or violations in writing.

2. Specify the Length of time available to correct the violation.
3. Clearly state any penalties associated with the subject violation.

ARTICLE VIII. PUBLIC EDUCATION

Section 1. Public Education and Programs

A. The East Petersburg Borough Authority shall provide for ongoing dissemination of information regarding the Wellhead Protection Program and educate the citizens on their responsibilities to comply with the program requirements. The following shall be included as part of this program:

1. Develop informational literature including pamphlets, brochures, and newsletters describing the requirements of this program.
2. Provide and maintain signs along roadways and in housing developments identifying the Wellhead Protection Areas.
3. Periodic mailings of education literature on groundwater protection issues.

ARTICLE IX. CONTINGENCY AND EMERGENCY RESPONSE PLANNING

Section 1. Contingency Plan.

A. The East Petersburg Borough Authority shall prepare and maintain a Contingency Plan that addresses the following issues:

1. Determines who is responsible for the coordination of response actions.
2. Identifies alternative water supply sources.
3. Makes arrangements for necessary technical, logistical, and financial resources to implement the contingency program.

B. It shall be the responsibility of the Authority to review the Contingency Plan on an annual basis and update the Plan if it is determined to be inadequate.

Section 2. Emergency Response Plan.

A. The Authority shall prepare and maintain an Emergency Response Plan to respond to hazardous material spills which threaten the water supply. This Plan should address the following issues:

1. Develop a detailed clean-up strategy for hazardous material spills assigning specific responsibilities and tasks to Borough/Township Staff, local fire departments, clean-up specialists, and waste disposal firms.
2. Necessary arrangements and service contracts shall be made and renewed on an annual basis.

B. It shall be the responsibility of the Authority to review the Emergency Response Plan on an annual basis and update the Plan if it is determined to be inadequate. The Authority shall also make necessary arrangements and service contracts necessary to implement the Plan.

ARTICLE X. FEES

Section 1. Fees Established by Resolution

A. All Fees for Operating Permits and Review of Subdivision and Land Development Plans shall be established by resolutions of the Borough Council/Township Commissioners. Fees established shall be reviewed at least annually and adjusted as required and shall include costs involved with the implementation of this ordinance including Administrative costs and Engineer Review Fees.

ARTICLE XI. SEVERABILITY AND AMENDMENT

Section 1. Severability

A. Should any section, paragraph, sentence, clause, or phrase of this ordinance be declared unconstitutional or invalid for any reason, the remainder of this ordinance shall not be affected thereby.

Section 2. Amendments

A. This ordinance or any part thereof may be amended from time to time in accordance with the procedures as established by law.

ORDAINED AND ENACTED this ___ day of _____, 19___. This ordinance shall become effective on the ___ day of _____, 19___.

**EAST PETERSBURG BOROUGH
LANCASTER COUNTY, PENNSYLVANIA**

**TOWNSHIP OF MANHEIM
LANCASTER COUNTY, PENNSYLVANIA**

**TOWNSHIP OF EAST HEMPFIELD
LANCASTER COUNTY, PENNSYLVANIA**

ATTEST:

Secretary

(SEALED)