

State of West Virginia
Source Water Assessment and Protection Program
Source Water Assessment Report

Hardy County PSD-Baker
PWSID WV3301613
Hardy County



Prepared by:

West Virginia Department of Health and Human Resources
Bureau for Public Health
Office of Environmental Health Services
Source Water Protection Unit

June 30, 2013

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SOURCE WATER ASSESSMENT AND PROTECTION (SWAP) PROGRAM

REPORT

Prepared by: West Virginia Department of Health and Human Resources (WVDHHR), SWAP Program

INTRODUCTION

What is the Purpose of this Report?

The Source Water Assessment and Protection (SWAP) Program of the West Virginia Bureau for Public Health (BPH) is completing assessments of the contamination threats to all public water sources (private wells are not involved in this effort). This concept of source water protection is a preventative approach and complements the effort of proper treatment and disinfection by the individual water supply systems. This assessment is one step in a multilevel approach to ensure a safe future supply of water by understanding what potential threats exist.

This Source Water Assessment Public Summary is to provide information to support local and state efforts to protect public drinking water source and to maintain a safe and dependable water supply for the protection of human health by preventing contamination. The costs of these preventative measures will rarely exceed the cost of remediating a public water supply once it is contaminated.

The emphasis of this assessment is on “source” water rather than the “tap” water. Information on tap water quality is available in the Consumer Confidence Report, which can be obtained from your local water supplier.

This report identifies the significant potential contaminant sources that could threaten source(s) water quality. Your susceptibility ranking does not imply poor water quality. Actual water quality is best reflected by results of regular water tests. Please refer to Table 1 for an informational summary of your public water supply.

Hardy County PSD-Baker is located approximately 3 miles west of Baker, Hardy County, West Virginia along County Route 11. Source location, PCS inventories, and activity status are based on data and information collected during a field review conducted by WVDHHR personnel on June 11, 2013. A delineation and assessment is provided for the single reservoir source.

Table 1 Public Water Supply Information

PWS Name	Hardy County PSD-Baker
Address	P.O. Box 900
City, State, Zip	Moorefield, West Virginia 26836
PWSID#	WV3301613
County	Hardy County
System Type	Community

What is SWAP?

The SWAP, established under the Safe Drinking Water Act, requires every state to:

- Delineate the area from which a public water supply system receives its water;
- Inventory land uses within the recharge areas of all public water supplies;
- Assess the susceptibility of drinking water sources to contamination from these land uses;
- Publicize the results to provide support for improved protection of sources.

The WVDHHR SWAP will complete all of these components of a source water assessment.

What is Susceptibility?

Susceptibility is a measure of your intake's potential to become contaminated by land uses and activities within the SWPA. The purpose of a susceptibility analysis is to provide an overview to actions a public water system may take to further reduce the susceptibility to their drinking water supply. Because public water supplies have been constructed in various hydrologic settings and have a range of potentially significant contaminant sources, best professional judgment has been used in determining the susceptibility of each public water system to contamination. The possibility of a release from potential contaminant sources is greatly reduced if Best Management Practices (BMP's) are used. The susceptibility determination for your intake did not take into account whether BMP's are being used.

Susceptibility of drinking water does not mean a customer will drink contaminated water. Water suppliers protect drinking water by monitoring and treating water supplies, and using BMP's and source water protection measures to ensure that safe water is delivered to the tap.

How Was my Intake's Susceptibility Determined?

Your intake's susceptibility is based on the following parameters:

- Review of the hydrologic setting (ease of contamination transport through the watershed);
- Review of the physical integrity of the intake(s);
- Review of available surface water quality data;
- Characterization of the potential significant contaminant sources identified in the SWPA;
- Integration of this information to identify the greatest threats to the source water and suggestions of appropriate protection strategies or activities.

Table 2 Source of Your Drinking Water - Hydrologic Setting

Source Name	Setting/Sensitivity
Parker Hollow Impoundment - IN001	Small Watershed / High Sensitivity

System Information

The Hardy County PSD-Baker operates a community public water system that serves a population of approximately 150 people (23 residential and 6 commercial service connections). A community public water system is a system that regularly supplies drinking water from its own sources to at least 15 service connections used by year-round residents of the area or regularly serves 25 or more people throughout the entire year. The treatment capacity is approximately 500,000 gallons per day, but current average production is about 23,000 gallons per day.

Water treatment processes include (chemical coagulation, flocculation, sedimentation, membrane filtration, and disinfection). There is one storage tank with a combined capacity of 185,000 gallons on the Hardy County PSD-Baker distribution system.

The source water intake is located in the Parker Hollow Impoundment a multipurpose dam constructed in 2002 under the Watershed Protection and Flood Prevention Act. Total storage is 1,063 acre feet. The height of the dam is 83 feet.

What is my Intake's Source Water Protection Area?

Delineation

Delineation is the process used to identify and map the drainage basin that supplies water to a surface water intake. This area is referred to as the source water protection area (SWPA).

All surface waters are susceptible to contamination because they are exposed at the surface and lack a protective barrier from contamination. Accidental spills, releases, sudden precipitation events that result in overland runoff, or storm sewer discharges can allow pollutants to readily enter the source water and potentially contaminate the drinking water at the intake. Because of this, the SWPA consists of two types of delineations.

Watershed Delineation Area

The first type of delineation is the Watershed Delineation Area (WSDA). The WSDA covers approximately 4,419 acres (7 square miles) in the Baker Run watershed. The WSDA includes the entire watershed area upstream of the intake up to the boundary of the West Virginia state border, or a topographic boundary. The perimeter of the catchment area provides the water to the water supply intake. Figure 2 shows the watershed boundaries.

Zone of Critical Concern

The second type of delineation is the Zone of Critical Concern (ZCC). The ZCC is a corridor along streams within the WSDA that warrants a more detailed inventory and management due to its proximity to the surface intake and to the susceptibility to potential contaminants. The ZCC is calculated using a mathematical model that accounts for stream flows, gradient, and area topography. The length of the ZCC is based on a five-hour time of travel. The ZCC width is 1,000 feet from each bank of the principal stream and 500 feet from each bank of the tributaries draining into the principal stream. Due to the relatively small size of the watershed delineation area compared to the ZCC, only the WSDA was applied in this report.

Table 3 Physical Integrity of Intake

Intake Name	Type	Construction Date	Source Integrity
Parker Hollow Impoundment - IN001	Vertical Pipe	2002	Unknown

Table 4 Water Quality and Water Treatment Information

Intake Name	Results
Parker Hollow Impoundment - IN001	Has exceeded TTHM and HAA5 limits

The contaminants addressed in this assessment include those regulated under the Safe Drinking Water Act as well as those the WVDHHR has determined may present a concern to public health. Periodic analysis for a variety of bacterial, organic, nitrate, synthetic and inorganic contaminants in the water after treatment may consistently yield values below the maximum contaminant level (MCL) as regulated by the Safe Drinking Water Act. Drinking water that meets MCL standards is associated with little or no health risk. Because sampling requirements are for treated water, the lack of water quality impacts does not necessarily indicate a lack of contamination. This determination is limited by the sampling that is performed for the water system.

All drinking water including bottled water may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. For further information regarding the quality of the system's finished water, please refer to the Consumer Confidence Report or call the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791 or contact your local health provider for more information about contaminants and potential health effects.

EVALUATION OF SIGNIFICANT POTENTIAL SOURCES OF CONTAMINATION

Potential Contaminant Source Inventory

The inventory for Hardy County PSD-Baker consists of approximately 29 significant Potential Contaminant Sources (PCS) of which 9 are considered higher threats to water quality. Please refer to Table 5 for a listing of identified PCSs and Figures 2 and 3 for their locations within the SWPA. Regulated facilities and activities are listed in Table 6 and located on Figures 2 and 3, if present within the SWPA.

Some PCSs that are located outside of the SWPA may be included for information purposes. Water supply intakes and treatment plants are not identified on the map for security reasons. Some facilities are not located on the SWPA map as they occur over broad geographic areas (agricultural fields, highways, and railroad right-of-ways).

Each significant potential source of contamination has been analyzed and prioritized (low, moderate, and high, unless otherwise noted) relative to its potential to impact the water supply. It is important to note that the links between the PCS and the primary contaminant types are not intended to be comprehensive, but only those commonly associated with the PCS. Any potential source may have one or more types of contaminants associated with the chemicals indicated. Threat rankings are a combination of the perceived risk of the release of a contaminant from a land use area, the migration route of the contaminant to the water supply and the relative public health risk of the contaminant itself. The risk rankings are based on the general nature of their activities and the contaminants associated with them, not on facility specific information, such as management practices. This ranking does not take into consideration any unforeseen releases or the dynamics of new PCS's within the delineated SWPA.

A detailed risk assessment of PCS's was beyond the scope of what could be accomplished with available resources and data. A detailed risk analysis is more meaningful when prepared by local decision makers as the bridge from assessment work to protection strategies.

Historic Land Use and Land Use Changes

Historic land use within the SWPA has been primarily agricultural including various crops, hay production, confined poultry production, and livestock grazing. Aerial photographs were examined to determine major changes in land use that have occurred during the last 20 years.

Between 1991 and 2011, additional poultry production facilities were constructed at existing sites. A gas compression station, operated by Columbia Gas Transmission Corporation, was constructed along an unnamed tributary of Camp Branch approximately one mile upstream of the source impoundment.

Current land cover class areas (2011 imagery) are illustrated in Figure 5. Forest cover (3,305 acres) comprises the majority of the SWPA area followed by agriculture (993 acres), roadways (63 acres), impounded water surface (32 acres), and structures/impervious surfaces (26 acres).

Four gas wells operated by Columbia Gas Transmission Corporation are present in the SWPA. These wells are developed along the Whip Cove Anticline East. Two of the wells are for observation and storage (R2 and R4), one is plugged (R3), and one is of unknown use (R1).

Regional Water Supply and Sewage Treatment

Surface and ground water sources are used for public and private water supply within the SWPA. Residences utilize septic systems for sewage treatment.

Overview of LUST, TRI, and RCRA Occurrences

No LUST, TRI, or RCRA sites were identified within the SWPA.

Table 5 Potential Contaminant Sources

PCS No.	Map Code	PCS Description	PCS Category	Associated Chemicals	Threat to SW
1	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
2	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
3	A-2	Animal Feedlots	Agriculture	NN, MP, TO	H
4	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
5	A-3	Confined Animal Feeding Operations	Agriculture	NN, MP, TO	H
6	C-1	Above Ground Storage Tanks (combustible brines and water)	Commercial	PH, VOC	L
7	I-7	Chemical/petroleum Pipelines (compressor station)	Industrial	PH, M, VOC, SOC	H
8	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
9	C-3	Auto Repair Shops	Commercial	PH, M, VOC, HM, SOC	M
10	A-17	Other Animal Facilities (horse stable)	Agriculture	MP	L
11	A-12	Farm Machinery Areas	Agriculture	PH, VOC	L
12	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
13	A-3	Confined Animal Feeding Operations	Agriculture	NN, MP, TO	H
14	A-12	Farm Machinery Areas	Agriculture	PH, VOC	L
15	C-53	Other (manufacturing facility)	Commercial	ND	ND
16	A-3	Confined Animal Feeding Operations	Agriculture	NN, MP, TO	H
17	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
18	A-12	Farm Machinery Areas	Agriculture	PH, VOC	L
19	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
20	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M

21	A-2	Animal Feedlots	Agriculture	NN, MP, TO	H
22	A-2	Animal Feedlots	Agriculture	NN, MP, TO	H
23	A-3	Confined Animal Feeding Operations	Agriculture	NN, MP, TO	H
24	R-4	Residential (single family homes)	Residential	VOC, SOC, NN	M
	M-7	Highway (County Route 11)	Municipal	PH, VOC, M	H

Please note that the locations of water sources and water treatment plants are not displayed on figures due to security reasons.

Table 6 Regulated Sources

PCS No.	Map Code	PCS Description	PCS Category	Associated Chemicals	Threat to SW
R1	I-40	Wells: Oil and Gas	Industrial	PH, M, VOC	M
R2	I-40	Wells: Oil and Gas	Industrial	PH, M, VOC	M
R3	I-40	Wells: Oil and Gas (plugged)	Industrial	PH, M, VOC	M
R4	I-40	Wells: Oil and Gas	Industrial	PH, M, VOC	M

Index to Associated Chemicals is as follows:

MP Microbiological Pathogens: Total/Fecal Coliform, Viruses, Protozoa
 NN Nitrate/Nitrite
 VOC Volatile Organic Compounds
 HM Heavy Metals
 M Metals
 SOC Synthetic Organic Compounds

T Turbidity
 TO Taste and Odor precursors
 R Radionuclides
 PH Petroleum Hydrocarbons
 D Disinfection byproducts
 ND Not Determined

RESOURCE CHARACTERIZATION

The purpose for conducting the Resource Characterization analysis of the delineated SWPA is to obtain an understanding of its physical, biological, chemical, and hydrological characteristics.

Soils and Geology

The top ten soil series occurring within the SWPA are listed in Table 7 (ordered by rank). See Figure 6 for complete soil coverage within the SWPA.

Table 7 Soil Types

MUSYM	Name	Slope
BkE	Berks channery silt loam	25 to 35 percent slopes
BkF	Berks channery silt loam	35 to 65 percent slopes
BkD	Berks channery silt loam	15 to 25 percent slopes
DIF	Dekalb/Hazleton/Lehew stony soils	35 to 65 percent slopes
LeE	Lehew channery loam	25 to 35 percent slopes
BkC	Berks channery silt loam	8 to 15 percent slopes
CaD	Calvin channery silt loam	15 to 25 percent slopes
Pb	Potomac fine sandy loam	NA
LID	Lehew and Dekalb channery loams	15 to 25 percent slopes
ErB	Ernest silt loam	3 to 8 percent slopes

The source impoundment is located in the Valley and Ridge Province of West Virginia. The Valley and Ridge Province consists of complex faulted blocks that contain either localized-confined or localized unconfined aquifers, or lack of aquifers. Structural features (from west to east) include the Whip Cove Syncline, the Whip Cove Anticline East (gas storage and production), and the Sideling Hill Syncline. Rock units within the SWPA include those of the Pocono and Chemung Groups, and the Hampshire Formation (See Figure 7). Shales of the Chemung and Hampshire represent the majority of the rock types expressed at the surface within the SWPA.

Potential for Surface Runoff to Occur

The soil types present in the watershed area and the associated soil properties have a direct influence on the potential for surface runoff to occur. As infiltration rate of soil increases, (more precipitation soaking in rather than running off) the contaminant load associated with the reduced runoff should decrease. Table 8 provides a summary of the characteristics of the associated soil groups.

Table 8 Major Soil Associations, Drainage, and Topography

Soil Associations	Soil Drainage	Topographic Setting
Berks Channery Silt Loams	Well drained	Moderately to very steep
Dekalb, Hazleton and Lehew Stony Soils	Well drained	Moderately to very steep
Lehew Channery Loam	Well drained	Steep
Calvin Channery Silt Loam	Well drained	Moderately Steep

Ease of movement of material into the Stream System (Rate of Overland Material Transport)

The size, shape, and slope of the SWAP area have a direct influence on material transported by surface runoff. In general, the longer the overland travel distance and travel time that surface runoff has taken in order to reach a stream channel, the greater the chance it has to deposit and filter the contaminants that may occur. Table 9 provides an analysis of the size, shape, and slope.

Table 9 Size, Shape, and Slope of Watershed

Factor	Value
Size of WSDA	4,419 acres
Shape of WSDA	Oval
Stream Length (Main Stem)	Camp Branch - 3.9 miles
	Parker Hollow - 3.5 miles
Average Watershed Slope	39 degrees

Movement of Water through the Watershed Area

A number of physical and natural factors can influence the movement of water through the SWAP area. The pattern and development of the drainage network of the SWAP area directly influence the rate of water movement. Evaluation of the hydrologic cycle will provide an indication of the amount of annual rainfall that is absorbed into the ground or becomes runoff. Table 10 summarizes the total mileage of streams contained in the WSDA, average stream gradient of the main stem, average rainfall, the nearest relevant USGS stream gauge, distance to gauge, topographic position of gauge, annual mean discharge, high flow, and low flow.

Table 10 Watershed Gradient and Flow

Factor	Value
Number of Stream Miles	12.5 miles
Average Stream Gradient (Main Stem)	Camp Branch – 323 feet per mile
	Parker Hollow – 100 feet per mile
Average Rainfall	34 inches per year
Nearest Relevant USGS Stream Gauge	NA
Distance to Relevant USGS Stream Gauge	NA
USGS Stream Gauge Topographic Position	NA
Annual Mean Discharge	NA
High Flow	NA
Low Flow	NA

SYSTEM SUSCEPTIBILITY

Based on this summarized narrative and susceptibility review, the overall susceptibility for Intake IN001 of the Hardy County PSD-Baker indicates a high susceptibility to the identified potential sources of contamination.

For this susceptibility analysis, the State combined the inventory results with other relevant information to decide how likely a water supply may become contaminated by the identified potential sources of contamination. This step makes the assessments useful for communities, since it provides information that local decision-makers use to prioritize approaches for protecting the drinking water supply. It does not mean that these water sources are currently contaminated or are going to be contaminated in the near future, but the potential does exist.

RECOMMENDATION FOR YOUR SOURCE WATER ASSESSMENT AND PROTECTION ACTIVITIES

The following list provides specific recommendations for your source water assessment and protection activities.

- A source water protection and management program should be developed for the water system. Preferably, the protection plan should be developed for the entire SWPA with the cooperation of neighboring towns, county, and state agencies. It is recommended that protection and management efforts should focus on obtaining additional information on the sources present to evaluate their risk.
- Reduce existing chronic threats within the SWPA that are now in service or were in the past. This information should include the type of leak detection and corrosion protection currently being used at the facility.
- Investigate what types of preventative pollution measures are being conducted by the industrial or commercial facilities located within the SWPA. Some facilities may already have developed an emergency response plan for their property.
- Inspect the SWPA regularly.
- Implement Land Use Planning tools to influence future developments within the SWPA. One way to accomplish this is to join forces with the county to adopt a zoning ordinance that would govern certain uses that are considered high threats to surface water.
- Provide maps of the SWPA to the County Planning Commission or other appropriate county agency to make them aware of the location of proposed development in relation to the water supply source.
- Support and encourage the implementation of Best Management Practices for agricultural areas including grazing lands, crop production farms, and orchards. In addition, support information can be provided to residents and commercial users to encourage the reduction in over use of common pesticides and fertilizers.
- Implement systems for regular collection of hazardous waste from residents. For example, the Eastern Panhandle Soil Conservation District and the Hardy County Solid Waste Authority has helped organize amnesty days in the past where residents could bring in all types of hazardous wastes without threat of punishment.

- Encourage and implement public education about your water supply regarding its susceptibility to contamination and ways to protect. This could come in the form of brochures containing information and advice about surface water and the local terrain. For example, the Hardy County Health Department has an on-going educational program that is presented to all fourth graders in the county.
- Support and encourage the identification of contamination incidents by citizens.
- Include information regarding contamination and source water protection in mailings to homeowners, including non-emergency contact information. Reduce the amount of septic systems in use by extension of the public sewer system or other approved systems.

NEXT STEP:

The next step in source water protection planning is to prepare or update a Source Water Protection Plan (SWPP) plan. The SWPP plan incorporates this source water delineation and assessment report and the following additional sections:

Contingency Planning

A contingency plan documents the system's planned response to interruption of the source water.

Alternative Sources

Information pertaining to alternative water sources focusing on long-term source replacement should the system be required to develop a new source of water due to contamination (or other reasons). This section outlines the most likely sources that can be utilized.

Management Planning

Management planning is the most important element of SWAP. The management plan identifies specific activities that will be pursued by the system to protect their water resources. The system will benefit by taking a proactive approach to source water protection in their source water protection area. It is anticipated that most of the management effort will focus on coordination with government agencies and periodic surveys of the watersheds. It may be necessary to conduct a limited number of special studies to determine actual risk and consequences for selected contaminant sources. This information may be needed before decisions can be made on management activities.

NEED ADDITIONAL INFORMATION?

To obtain additional information and/or links, visit the WVDHHP Web site at <http://www.wvdhhr.org/oehs/eed/swap/> or call the SWAP Program at 304-558-2981.

***Disclaimer - The coverage presented in this program are under constant revision as new sites or facilities are added. They may not contain all the potential or existing sites or facilities. The West Virginia Bureau for Public Health is not responsible for the use or interpretation of this information.**

Maps contained in this source water assessment report are provided as a public service by the West Virginia Bureau for Public Health. The Bureau makes no representation regarding completeness or accuracy of the data presented thereon. Efforts are made to verify and update the data used to generate the maps. However, with data sets of this size and nature, eliminating all errors is difficult. Thus, the user assumes total responsibility for verification.

Please report any inaccuracies on either the map or inventory by calling the SWAP Program at 304-558-2981.

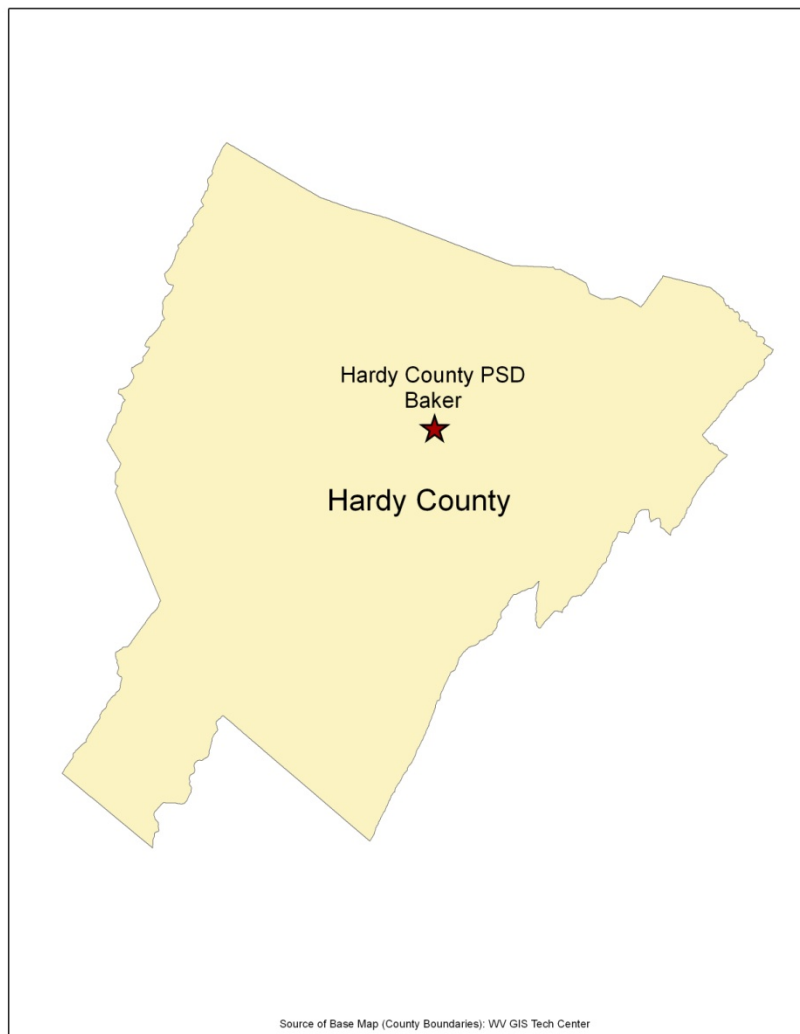


Figure 1: Hardy County PSD-Baker Location Map

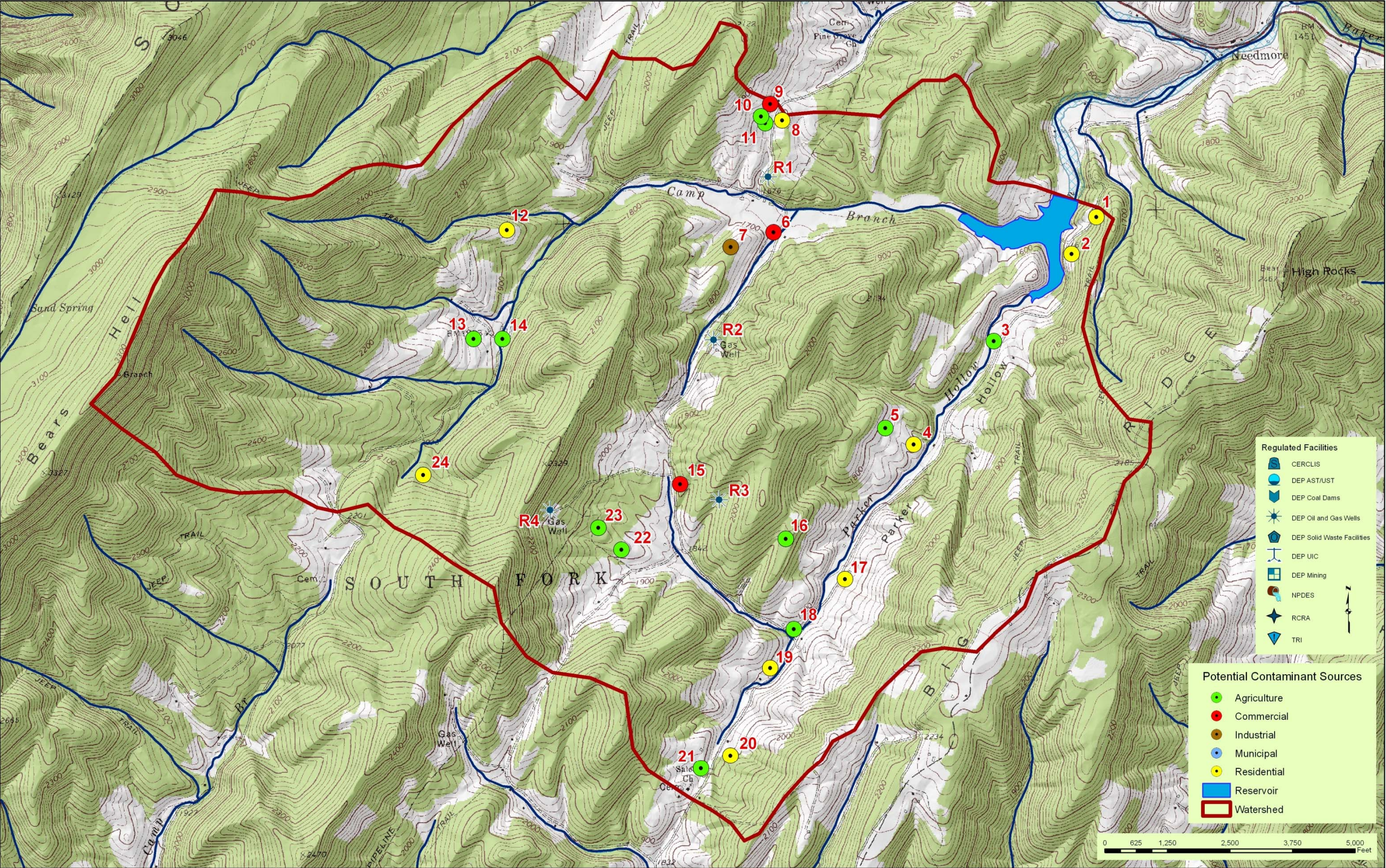
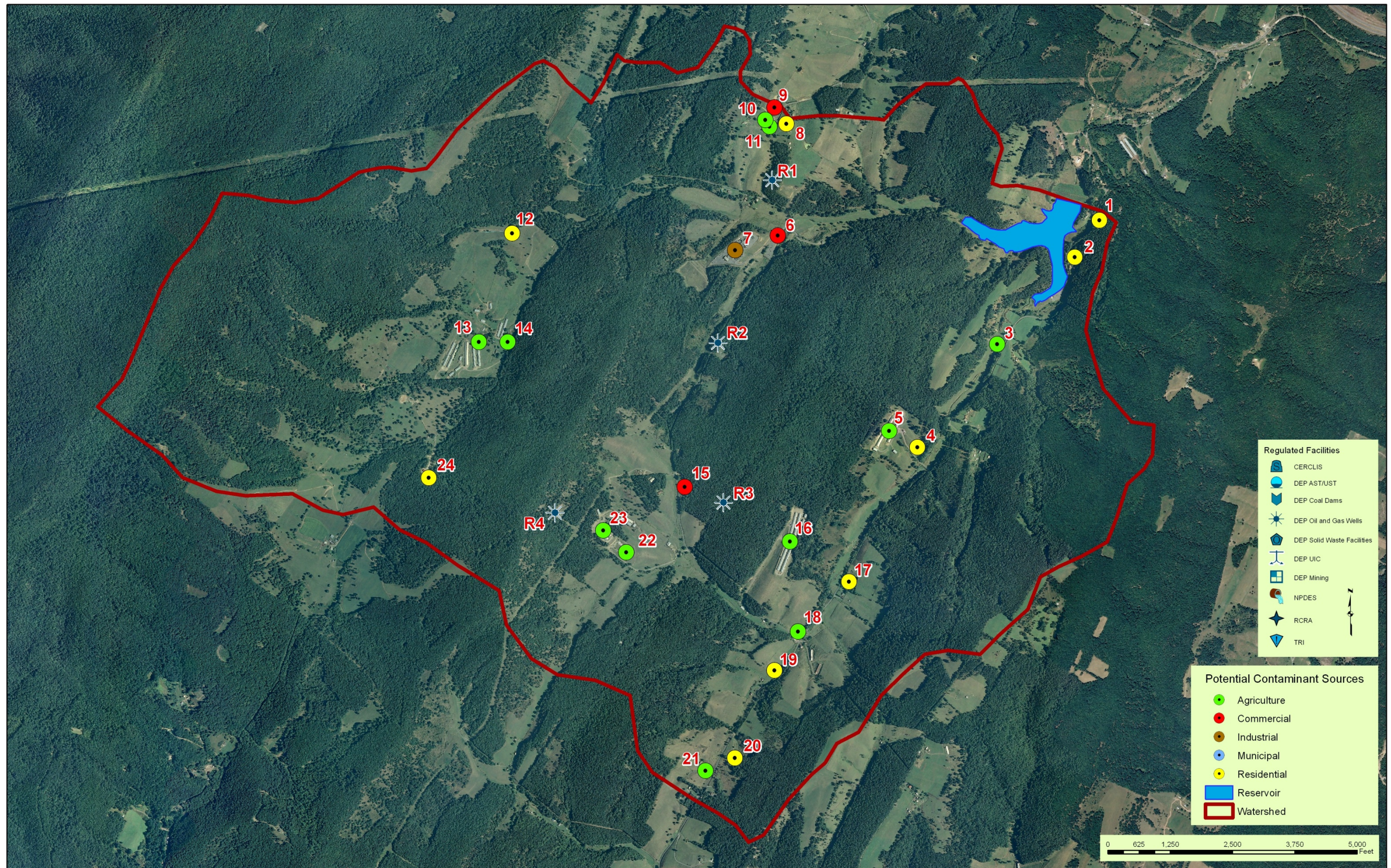


Figure 2: Hardy County PSD-Baker Source Water Protection Area with PCS Locations (Topographic Map Background)



Source of Base Maps, Geological Features, Structural Features, and Flood Hazard: WV GIS Tech Center and WVGES

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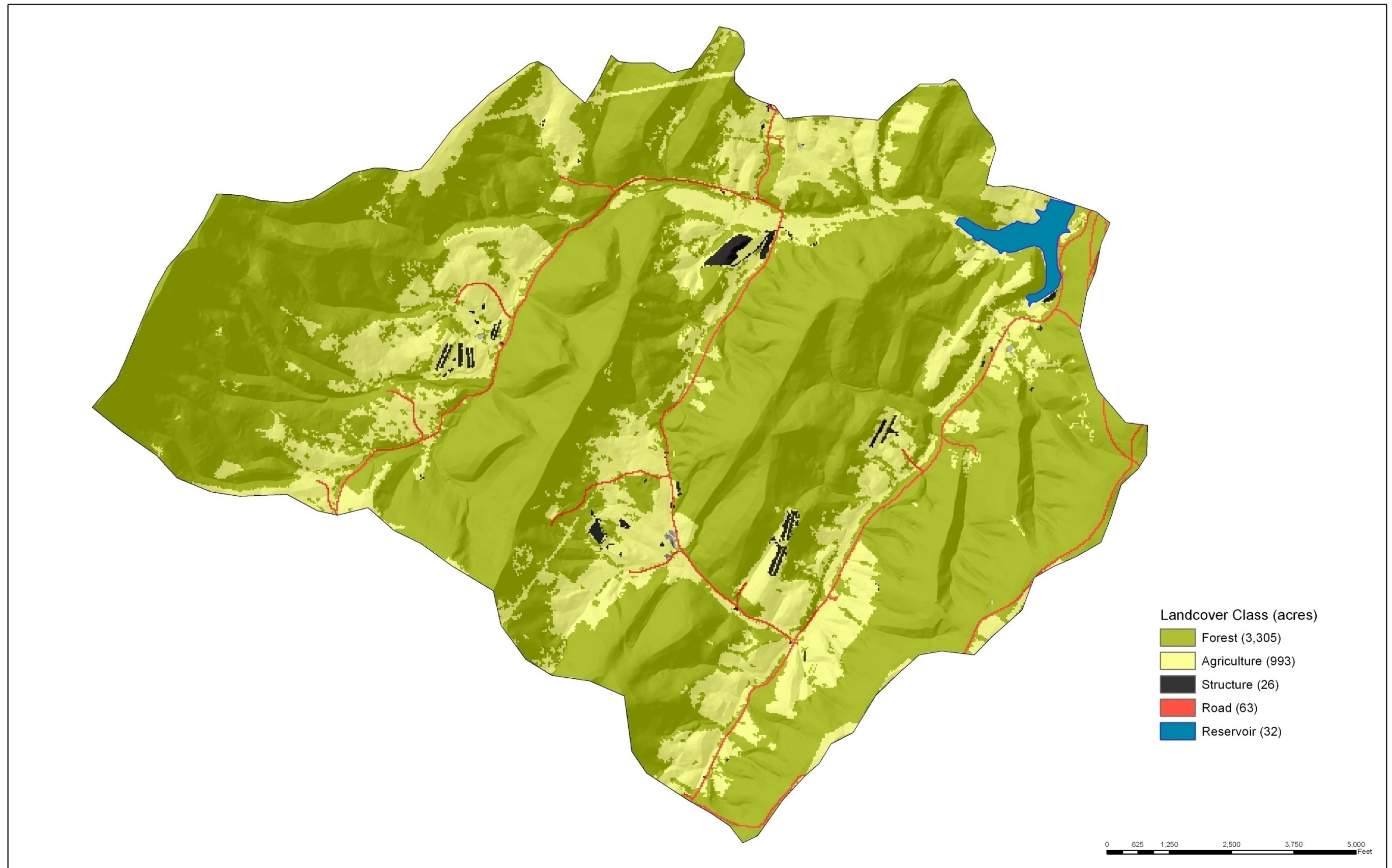
Figure 3 Hardy County PSD-Baker Source Water Protection Area with PCS Locations (2011 Aerial Photo Background)



Source of Base Maps, Geological Features, Structural Features, and Flood Hazard: WV GIS Tech Center and WVGES

J. Northeimer SWAP EED 6/5/2013

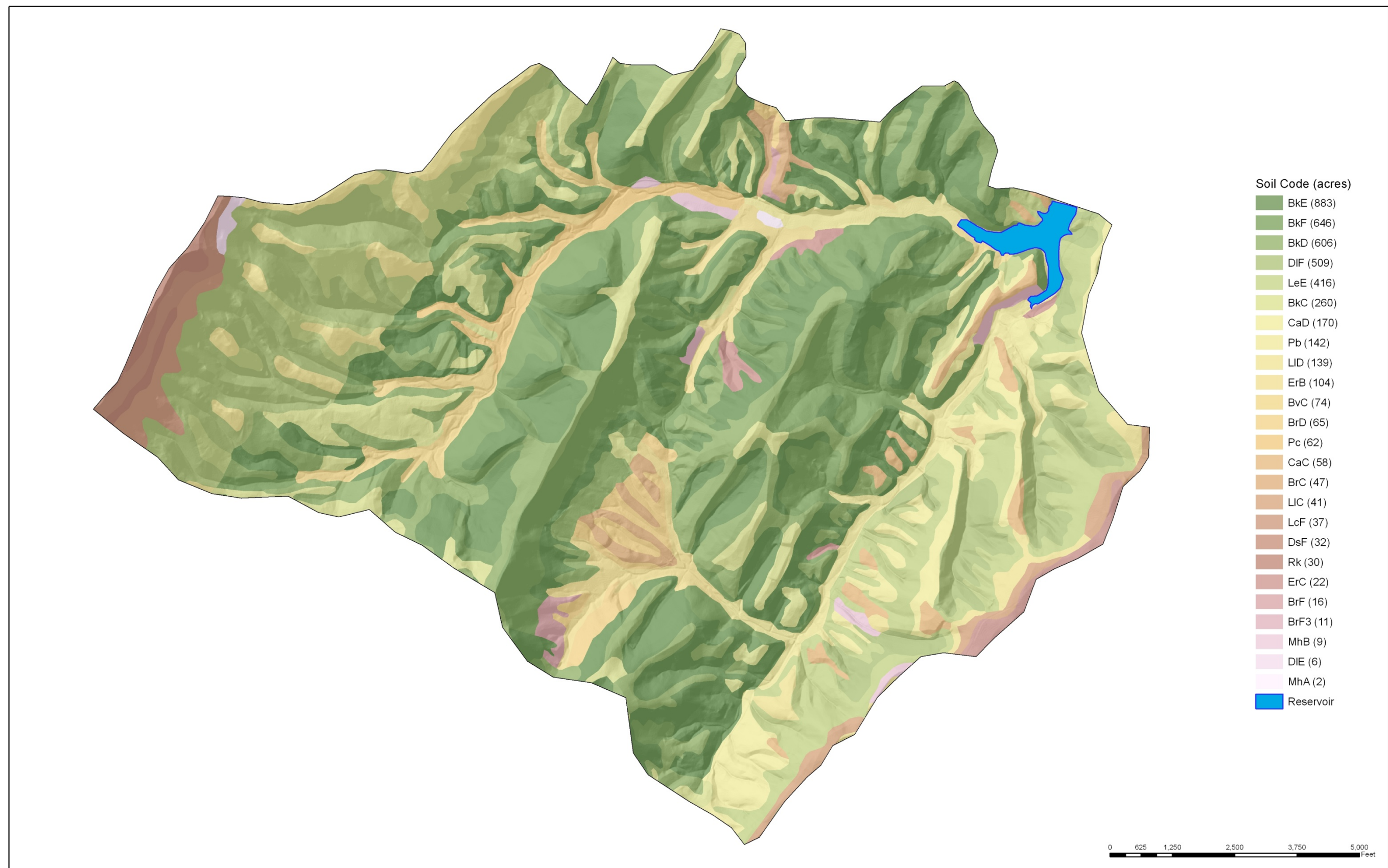
Figure 4 Hardy County PSD-Baker Source Water Protection Area (1991 Aerial Photo Background)



Source of Base Maps, Geological Features, Structural Features, and Flood Hazard: WV GIS Tech Center and WVGES

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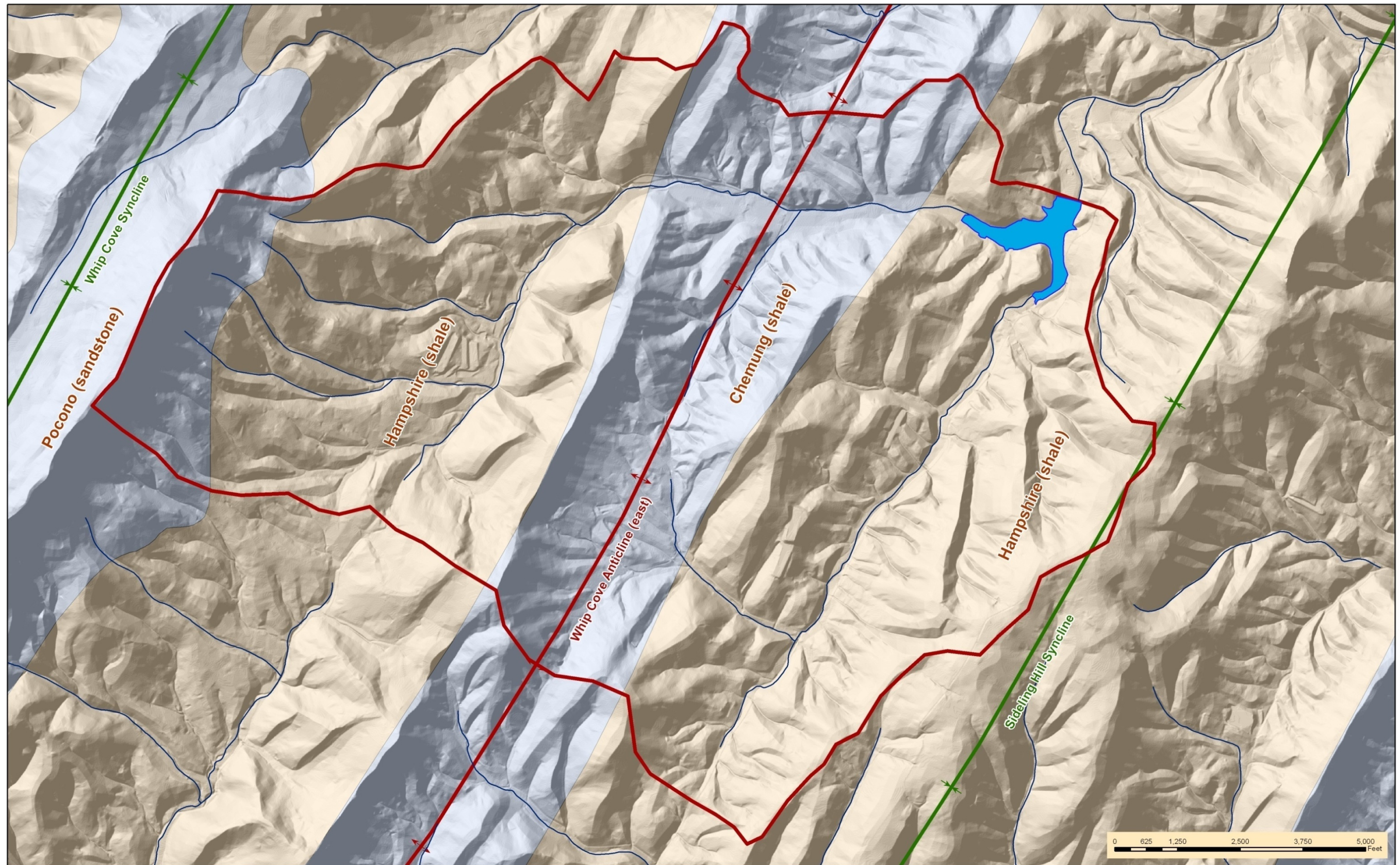
Figure 5 Hardy County PSD-Baker 2011 Landcover Map



Source of Base Maps, Geological Features, Structural Features, and Flood Hazard: WV GIS Tech Center and WVGES

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Figure 6 Hardy County PSD-Baker Soil Map



Source of Base Maps, Geological Features, Structural Features, and Flood Hazard: WV GIS Tech Center and WVGES

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Figure 7 Hardy County PSD-Baker Geologic Map

APPENDIX A EPA REGULATED SITES

CERCLIS:

The Superfund program was created by the Comprehensive Environmental Response, Compensation, and Liability Act, amended by the Superfund Amendments and Reauthorization Act. The acts established authority for the government to respond to the release/threat of release of hazardous wastes, including cleanup and enforcement actions. Long-term cleanups at National Priority List sites last more than a year while short term /emergency cleanups are usually completed in less than a year. CERCLIS is a database used by the U.S. Environmental Protection Agency to track activities conducted under its Superfund program. CERCLIS contains data on potentially hazardous waste sites that have been reported to the EPA. Sites are investigated because of a potential for releasing hazardous substances into the environment are added to the CERCLIS inventory. EPA learns of these sites through notification by the owner, citizen complaints, state and local government identification, and investigations by EPA programs other than Superfund. Specific information is tracked for each individual site.

NPDES:

The National Pollutant Discharge Elimination System (NPDES) database identifies facilities permitted for the operation of point source discharges to surface waters in accordance with the requirements of Section 402 of the Federal Water Pollution Control Act. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into public waters.

RCRA:

This database has records for all hazardous waste, generators, and transporters as defined by the Resource Conservation Recovery Act (RCRA). Hazardous waste as defined by RCRA is waste material that exhibits ignitability, corrosivity, reactivity, or toxicity. Hazardous waste comes in many shapes and forms. Chemical, metal, and furniture manufacturing are some examples of processes that create hazardous waste. RCRA tightly regulates all hazardous waste from "cradle to grave" (i.e., from manufacture to disposal).

TRI:

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

DEP Regulated Sites:

Abandoned Mine Sites:

Abandoned mine features compiled by the Office of Abandoned Mine Lands and Reclamation (AMLR) of the West Virginia Department of Environmental Protection. The AMLR eliminates damage that occurred from mining operations prior to August 3, 1977 and is funded by the AML fund. It corrects hazardous conditions and reclaims abandoned and forfeited mine sites. Typical AML features include highwalls, portals, refuse piles, and mining structures such as tipples.

Coal Dams:

Point and polygonal mining related impoundments regulated by the West Virginia Department of Environmental Protection's (WVDEP) Division of Mining and Reclamation (DMR).

Solid Waste Facilities:

Seventy-eight (78) municipal and non-municipal waste landfills and waste transfers stations. This data layer was published by West Virginia Department of Environmental Protection's (WVDEP) Division of Waste Management in 2/2002.

Oil and Gas Wells:

The Office of Oil and Gas maintains records on over 40,000 active and 25,000 inactive oil & gas wells. It also manages the Abandoned Well Plugging and Reclamation Program.

GLOSSARY OF TERMS

Best Management Practices (BMPs) are operational procedures used to prevent or reduce pollution.

Contamination - The addition to water of any substance or property preventing the use of reducing the usability of the water for ordinary purposes such as drinking, preparing food, bathing, washing, recreation, and cooling

Flood Plain - Any land area susceptible to inundation by floodwater from any source.

100-year Flood Plain - The area adjoining a river, stream, or water course covered by water in the event of a 100 year flood.

100 -year Flood - The flood having a one percent chance of being equaled or exceeded in magnitude in any given year. Contrary to popular belief it is not a flood occurring once every 100 years.

Maximum Contaminant Level (MCL) - Defined as the maximum permissible level of a contaminant in water, which is delivered to any user of a public water system.

Potential Contaminant Source (PCS) - A facility or container or route of travel that could release a sufficient amount of a harmful contaminant that upon entering a surface stream could contaminate it past the level of human health concerns.

Public Water System - is any water system or water supply which regularly supplies or offers to supply, piped water to the public for human consumption, if serving at least an average of twenty-five (25) individuals per day for at least sixty (60) days per year, or which has at least fifteen (15) service connections.

Remediation - The removal of contaminants from soil and/or ground water.

Sensitivity of the Source Water Protection Area (SWPA) - refers to the hydrologic or hydrogeologic characteristics that affect the transport of the contaminant from a source of contamination to a well or intake.

Source Water Assessment and Protection (SWAP) Program - The program established by the 1996 Amendments to the Safe Drinking Water Act (SDWA) which expanded the initial Wellhead Protection Program to all public drinking water supply systems including surface water systems. This program is to assess, preserve, and protect the source waters which are used to supply water for public drinking water supply systems and to provide a long term availability of an abundant supply of safe water in sufficient quantity for present and future citizens of the State. This program also enables the water supply owners, consumers, and others to initiate and promote actions to protect their drinking water supplies with the developed information.

Source Water Protection Area (SWPA) - refers to the area delineated by the State for a public water system, or including numerous public water systems, whether the source is ground water, surface water or both, as part of the West Virginia SWAP approved by the EPA under section 1453 of the Safe Drinking Water Act.

Susceptibility - The likelihood that a release from a PCS would contaminate and render unusable a drinking water supply such as aquifers or surface streams.

Water quality - Available data will be evaluated to help direct protection activities. If the water quality impact is known, evaluating the source(s) present may help to determine the origin of the contamination and where immediate protection efforts should be focused