FOR PUBLIC RELEASE

Source Water Protection Plan
Keyser City Of

PWSID: WV3302915

Mineral County

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Prepared By:

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Chief Operator

In cooperation with Keyser City Of

WV Bureau for Public Health, Source Water Assessment and Protection Program

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I Certify the information in the source water protection plan is complete and accurate to the best of my knowledge.

Responsible party of designee authorized to sign for water utility is on file:

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Name of Authorizing Signatory:

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Title of Authorizing Signatory:

7/6/2021

Date of Submission (mm/dd/yyyy):

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SOURCE WATER PROGRAM ACRONYMS

AST	Aboveground Storage Tank
BMP	Best Management Practices
ERP	Emergency Response Plan
GWUDI	Ground Water Under the Direct Influence of Surface Water
LEPC	Local Emergency Planning Committee
OEHS	EED Office of Environmental Health Services/Environmental Engineering Division
PE	Professional Engineer
PSSCs	Potential Source of Significant Contamination
PWSU	Public Water System Utility
RAIN	River Alert Information Network
RPDC	Regional Planning and Development Council
SDWA	Safe Drinking Water Act
SWAP	Source Water Assessment and Protection
SWAPP	Source Water Assessment and Protection Program
SWP	Source Water Protection
SWPA	Source Water Protection Area
SWPP	Source Water Protection Plan
WARN	Water/Wastewater Agency Response Network
WHPA	Wellhead Protection Area
WHPP	Wellhead Protection Program
WSDA	Watershed Delineation Area
WVBPH	West Virginia Bureau for Public Health
WVDEP	West Virginia Department of Environmental Protection
WVDHHR	West Virginia Department of Health and Human Resources
WVDHSEM	West Virginia Division of Homeland Security and Emergency Management
ZCC	Zone of Critical Concern
ZPC	Zone of Peripheral Concern

1.0 PURPOSE

The goal of the West Virginia Bureau of Public Health (WVBPH) source water assessment and protection (SWAP) program is to prevent degradation of source waters which may preclude present and future uses of drinking water supplies to provide safe water in sufficient quantity to users. The most efficient way to accomplish this goal is to encourage and oversee source water protection on a local level. Many aspects of source water protection may be best addressed by engaging local stakeholders.

The intent of this document is to describe what Keyser City Of has done, is currently doing, and plans to do to protect its source of drinking water. Although this water system treats the water to meet federal and state drinking water standards, conventional treatment does not fully eradicate all potential contaminants and treatment that goes beyond conventional methods is often very expensive. By completing this plan, Keyser City Of acknowledges that implementing measures to minimize and mitigate contamination can be a relatively economical way to help ensure the safety of the drinking water.

1.1. WHAT ARE THE BENEFITS OF PREPARING A SOURCE WATER PROTECTION PLAN?

- Fulfilling the requirement for the public water utilities to complete or update their source water protection plan.
- Identifying and prioritizing potential threats to the source of drinking water; and establishing strategies to minimize the threats.
- Planning for emergency response to incidents that compromise the water supply by contamination or depletion, including how the public, state, and local agencies will be informed.
- Planning for future expansion and development, including establishing secondary sources of water.
- Ensuring conditions to provide the safest and highest quality drinking water to customers at the lowest possible cost.
- Providing more opportunities for funding to improve infrastructure, purchase land in the protection area, and other improvements to the intake or source water protection areas.

2.0 BACKGROUND: WV SOURCE WATER ASSESSMENT AND PROTECTION PROGRAM

Since 1974, the federal Safe Drinking Water Act (SDWA) has set minimum standards on the construction, operation, and quality of water provided by public water systems. In 1986, Congress amended the SDWA. A portion of those amendments were designed to protect the source water contribution areas around ground water supply wells. This program eventually became known as the Wellhead Protection Program (WHPP). The purpose of the WHPP is to prevent pollution of the source water supplying the wells.

The Safe Drinking Water Act Amendments of 1996 expanded the concept of wellhead protection to include surface water sources under the umbrella term of Source Water Protection. The amendments encourage states to establish SWAP programs to protect all public drinking water supplies. As part of this initiative states must explain how protection areas for each public water system will be delineated, how potential contaminant sources will be inventoried, and how susceptibility ratings will be established.

In 1999, the WVBPH published the West Virginia Source Water Assessment and Protection Program, which was endorsed by the United States Environmental Protection Agency. Over the next few years, WVBPH staff completed an assessment (i.e., delineation, inventory and susceptibility analysis) for all of West Virginia's public water systems. Each public water system was sent a copy of its assessment report. Information regarding assessment reports for Keyser City Of can be found in **Table 1**.

3.0 STATE REGULATORY REQUIREMENTS

On June 6, 2014, §16 1 2 and §16 1 9a of the Code of West Virginia, 1931,was reenacted and amended by adding three new sections, designated §16 1 9c, §16 1 9d and §16-1-9e. The changes to the code outlines specific requirements for public water utilities that draw water from a surface water source or a surface water influenced groundwater source.

Under the amended and new codes each existing public water utility using surface water or ground water influenced by surface water as a source must have completed or updated a source water protection plan by July 1, 2016, and must continue to update their plan every three years. Existing source water protection plans have been developed for many public water utilities in the past. If available, these plans were reviewed and considered in the development of this updated plan. Any new water system established after July 1, 2016 must submit a source water protection plan before they start to operate. A new plan is also required when there is a significant change in the potential sources of significant contamination (PSSC) within the zone of critical concern (ZCC).

The code also requires that public water utilities include details regarding PSSCs, protection measures, system capacities, contingency plans, and communication plans. Before a plan can be approved, the local health department and public will be invited to contribute information for consideration. In some instances, public water utilities may be asked to conduct independent studies of the source water protection area and specific threats to gain additional information.

4.0 SYSTEM INFORMATION

KEYSER CITY OF is classified as a state regulated public utility and operates a community public water system. 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. For purposes of this source water protection plan, community public water systems are also referred to as public water utilities. Information on the population served by this utility is presented in **Table 1** below.

Table 1. Population Served by KEYSER CITY OF

Administrative office location:	111 N Davis Street, Keyser, MINERAL, WV, 26726		
Is the system a public utility, according to the Public Service Commission rule?	Yes		
Date of Most Recent Source Water Assessment Report:	3/1/2003		
Date of Most Recent Source Water Protection Plan:	7/1/2019		
Population served directly:	5202		
Bulk Water Purchaser Systems:	System Name	PWSID Number	Population
	McCoole, MD		1570
	New Creek Water Association	WV3302920	2965
Total Population Served by the Utility:	5202		
Does utility have multiple Source Water Protection Areas(SWPAs)?	No		
How many SWPAs does the utility have?	1		

5.0 WATER TREATMENT AND STORAGE

As required, Keyser City Of has assessed their system (e.g., treatment capacity, storage capacity, unaccounted for water, contingency plans) to evaluate their ability to provide drinking water and protect public health. **Table 2** contains information on the water treatment methods and capacity of the utility.Information about the surface sources from which Keyser City Of draws water can be found in **Table 3**. If the utility draws water from any groundwater sources to blend with the surface water the information about these ground water sources can be found in **Table 4**.

Table 2. Keyser City Of Water Treatment Information

Default Facility	
Water treatment processes (in order of occurrence) includes:	City of Keyser gravity feeds water from New Creek to the Clearwell under the Chemical Room., Low Service Water Pumps move water to the presediment basins where the water is mixed., Troughs gravity feed the water to the sediment basins., Water then passes through the sediment tubes to the filters., From the filters, the water goes to the clearwell., High service pumps put the water out to the system., The entire treatment process consists of Coagulation, flocculation, sedimentation, filtration, disinfection, and fluoridation.
The treatment capacity is approximately (GPD):	3,000,000
Current average production is approximately (GPD):	903,351
Maximum gallons of water treated and produced at that plant in one day during the past year was:	1,897,548
Minimum gallons of water treated and produced at that plant in one day during the past year was:	685,781
Plant is operated an average of hours a day:	11
Maximum number of hours of operation in one day at that plant during the past year was:	14
Minimum number of hours of operation in one day at that plant during the past year was:	8
How many storage tank(s) are maintained on systems distrbution system:	5
Total gallons of treated water storage:	2,474,000
Total gallons of raw water storage (GALs):	285,000

Table 3. Keyser City Of Surface Water Sources

Intake Name	Facility #	Local Name	Describe Intake	State Id Code	Date Constructed / Modified	Frequency of Use (Primary / Backup / Emergency)	Activity Status (Active/Inactive)
INTAKE-NEW CREEK	1941898	CITY OF KEYSER PRIMARY	Screened Intake	IN001		Permanent	Active

Table 4. Keyser City Of Ground Water Sources

Well/Spring Name	Facility #	Local Name	Date Constructed / Modified	Completion Report Available (Yes/No)	Well Depth (ft)	Casting Depth (ft)	Grout (Yes/No)	Frequency of Use (Primary / Backup / Emergency)	Activity Status (Active/Inactive)

6.0 DELINEATIONS

For surface water systems, delineation is the process used to identify and map the drainage basin that supplies water to a surface water intake. This area is generally 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. The SWPA for surface water is distinguished as a Watershed Delineation Area (WSDA) for planning purposes; and the Zone of Peripheral Concern (ZPC) and Zone of Critical Concern (ZCC) are defined for regulatory purposes.

The WSDA includes the entire watershed area upstream of the intake to the boundary of the State of West Virginia border, or a topographic boundary. The ZCC for a public surface water supply is a corridor along streams within the watershed that warrant more detailed scrutiny due to its proximity to the surface water intake and the intake's susceptibility to potential contaminants within that corridor. The ZCC is determined 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 of water in the streams to the water intake, plus an additional one-quarter mile below the water intake. The width of the zone of critical concern is 1,000 feet measured horizontally from each bank of the principal stream, and five hundred feet measured horizontally from each bank of the tributaries draining into the principal stream. Ohio River ZCC delineations are based on ORSANCO guidance and extend 25 miles above the intake. The Ohio River ZCC delineations include 1,320 feet (1/4 mile) measured from the bank of the main stem of the Ohio River and 500 feet on a tributary.

The ZPC for a public surface water supply source and for a public surface water influenced groundwater supply source is a corridor along streams within a watershed that warrants scrutiny due to its proximity to the surface water intake and the intake's susceptibility to potential contaminants within that corridor. The ZPC is determined using a mathematical model that accounts for stream flows, gradient and area topography. The length of the zone of peripheral concern is based on an additional five-hour time-of-travel of water in the streams beyond the perimeter of the zone of critical concern, which creates a protection zone of ten hours above the water intake. The width of the zone of peripheral concern is one thousand feet measured horizontally from each bank of the principal stream and five hundred feet measured horizontally from each bank of the tributaries draining into the principal stream.

For groundwater supplies there are two types of SWPA delineations: 1) wellhead delineations and 2) conjunctive delineations, which are developed for supplies identified as groundwater under the direct influence of surface water, or GWUDIs. A wellhead protection area is determined to be the area contributing to the recharge of the groundwater source (well or spring), within a five year time of travel. A conjunctive delineation combines a wellhead protection area for the hydrogeologic recharge and a connected surface area contributing to the wellhead.

Information and maps of the WSDA, ZCC, ZPC and Wellhead Protection Area for this public water supply were provided to the utility and are attached to this report. See **Appendix A. Figures**. Other information about the WSDA is shown in **Table 5**.

Table 5. Watershed Delineation Information

Intake Name	New Creek
Size of WSDA (Square Miles)	54
River Watershed Name (8-digit HUC)	North Branch Potomac - 02070002
Size of Zone of Critical Concern (Acres)	9693
Size of Zone of Peripheral Concern (Acres) (Include ZCC area)	3829
Do you blend with ground water	No
Do you have an intake or well/spring missing from the list?	No

7.0 PROTECTION TEAM

One important step in preparing a source water protection plan is to organize a source water protection team who will help develop and implement the plan. The legislative rule requires that water utilities make every effort to inform and engage the public, local government, local emergency planners, the local health department and affected residents at all levels of the development of the protection plan. WVBPH recommends that the water utility invite representatives from these organizations to join the protection team, which will ensure that they are given an opportunity to contribute in all aspects of source water protection plan development. Public water utilities should document their efforts to engage representatives and provide an explanation if any local stakeholder is unable to participate. In addition, other local stakeholders may be invited to participate on the team or contribute information to be considered. These individuals may be emergency response personnel, local decision makers, business and industry representatives, land owners (of land in the protection area), and additional concerned citizens.

The administrative contact for Keyser City Of is responsible for assembling the protection team and ensuring that members are provided the opportunity to contribute to the development of the plan. The acting members of the Protection Team are listed in **Table 6**.

The role of the protection team members will be to contribute information to the development of the source water protection plan, review draft plans and make recommendations to ensure accuracy and completeness, and when possible contribute to implementation and maintenance of the protection plan. The protection team members are chosen as trusted representatives of the community served by the water utility and may be designated to access confidential data that contains details about the local PSSCs. The input of the protection team will be carefully considered by the water utility when making final decisions relative to the documentation and implementation of the source water protection plan.

Keyser City Of will be responsible for updating the source water protection plan and rely upon input from the protection team and the public to better inform their decisions. To find out how you can become involved as a participant or contributor, visit the utility website or call the utility phone number, which are provided in **Table 6**.

Table 6. Protection Team Member and Contact Information

Name	Representing	Title	Phone Number	Email
Jim Hannas	Keyser City Of	Water Board Commissioner	(304)788-1511	
Patrick Halterman	Keyser City Of	Chief Operator	(304)788-3913	
A.J. Root	Keyser City Of	Health Department Director	(304)790-0162	
Brandon Crites	Keyser City Of	Citizen	(304)209-0048	
Luke Mckenzie	Keyser City Of	911 Director	(304)788-1821	
Buck Eagle	Keyser City Of	Water Board Member	(304)813-5550	
Damon Tillman	Keyser	Mayor	(304)582-8658	
Jeff Broadwater	Keyser	City Admistrator	(304)788-1511	
Date of First Protection Team Meeting:		Protection Team Meeting was held Wednesday, May 11, 2016 at Keyser City Of. Meeting minutes attached in Appendix E.		
Efforts made to inform and engage local stakeholders (public, local government, local emergency planners, local health department, and affected residents) and explain absence of recommended stakeholders		Phone calls and face to face correspondence to get the protection team assembled. Legal Advertisement for public meeting. PUBLIC MEETING JUNE 3, 2019 AT 3:00 PM AT KEYSER CITY HALL.		

8.0 POTENTIAL SOURCES OF SIGNIFICANT CONTAMINATION

Source water protection plans should provide a complete and comprehensive list of the PSSCs contained within the ZCC, based upon information obtained from the WVBPH, working in cooperation with the West Virginia Department of Environmental Protection (WVDEP) and the West Virginia Division of Homeland Security and Emergency Management (WVDHSEM). A facility or activity is listed as a PSSC if it has the potential to release a contaminant that could potentially impact a nearby public water supply, and it does not necessarily indicate that any release has occurred.

The list of PSSCs located in the SWPA is organized into two types: 1) SWAP PSSCs, and 2) Regulated Data. SWAP PSSCs are those that have been collected and verified by the WVBPH SWAP program during previous field investigations to form source water assessment reports and source water protection plans. Regulated PSSCs are derived from federal and state regulated databases, and may include data from WVDEP, US Environmental Protection Agency, WVDHSEM, and from state data sources.

8.1. CONFIDENTIALITY OF PSSCS

A list of the PSSCs contained within the ZCC should be included in the source water protection plan. In the event of a chemical spill, release or other related emergency, information pertaining to the contaminant shall be immediately disseminated to any emergency responders reporting to the site. The designees for Keyser City Of are identified in the communication planning section of the source water protection plan.

PSSC data from some agencies (ex. WVDHSEM, WVDEP, etc.) may be restricted due to the sensitive nature of the data. Locational data will be provided to the public water utility. However, to obtain specific details regarding contaminants, (such as information included in Tier II reports), water utilities should contact the local emergency planning commission (LEPC) or agencies, directly. While the maps and lists of the PSSCs and regulated sites are to be maintained in a confidential manner, these data are provided in **Appendix A. Figures** for internal review and planning uses only.

8.2. LOCAL AND REGIONAL PSSCS

For the purposes of this source water protection plan, local PSSCs are those that are identified by local stakeholders in addition to the PSSCs lists distributed by the WVBPH and other agencies. Local stakeholders may identify local PSSCs for two main reasons. The first is that it is possible that threats exist from unregulated sources and land uses that have not already been inventoried and do not appear in regulated databases. For this reason each public water utility should investigate their protection area for local PSSCs. A PSSC inventory should identify all contaminant sources and land uses in the delineated ZCC. The second reason local PSSCs are identified is because public water utilities may consider expanding the PSSC inventory effort outside of the ZCC into the ZPC and WSDA if necessary to properly identify all threats that could impact the drinking water source. As the utility considers threats in the watershed they may consider collaborating with upstream communities to identify and manage regional PSSCs.

When conducting local and regional PSSC inventories, utilities should consider that some sources may be obvious like above ground storage tanks, landfills, livestock confinement areas, highway or railroad right of ways, and sewage treatment facilities. Others are harder to locate like abandoned cesspools, underground tanks, French

drains, dry wells, or old dumps and mines.

The Keyser City Of reviewed intake locations and the delineated SWPAs to verify the existence of PSSCs provided by the WVBPH and identify new PSSCs. If possible, locations of regulated sites within the SWPA were confirmed. Information on any new or updated PSSCs identified by Keyser City Of and not already appearing in datasets from the WVBPH can be found in .**Table 7**.

Table 7. Locally Identified potential Sources of Significant Contamination

Please see Appendix A to view this information.

8.3. PRIORITIZATION OF THREATS AND MANAGEMENT STRATEGIES

Once the utility has identified local concerns, they must develop a management plan that identifies specific activities that will be pursued by the public water utility in cooperation and concert with the WVBPH, local health departments, local emergency responders, LEPC and other agencies and organizations to protect the source water from contamination threats.

Depending on the number identified, it may not be feasible to develop management strategies for all of the PSSCs in the SWPA. The identified PSSCs can be prioritized by potential threat to water quality, proximity to the intake(s), and local concern. The highest priority PSSCs can be addressed first in the initial management plan. Lower ranked PSSCs can be addressed in the future as time and resources allow. To assess the threat to the source water, water systems should consider confidential information about each PSSC. This information may be obtained from state or local emergency planning agencies, Tier II reports, facility owner, facility groundwater protection plans, spill prevention response plans, results of field investigations, etc.

In addition to identifying and prioritizing PSSCs within the SWPA, local source water concerns may also focus on critical areas. For the purposes of this source water protection plan, a critical area is defined as an area that is identified by local stakeholders and can lie within or outside of the ZCC. Critical areas may contain one or more PSSCs which would require immediate response to address a potential incident that could impact the source water.

A list of these priority PSSCs was selected and ranked by the Keyser City Of Protection Team. This list reflects the concerns of this specific utility and may contain PSSCs not previously identified and not within the ZCC or ZPC. **Table 8** contains a description of why each critical area or PSSC is considered a threat and what management strategies the utility is either currently using or could use in the future to address each threat.

9.0 IMPLEMENTATION PLAN FOR MANAGEMENT STRATEGIES

Keyser City Of reviewed the recommended strategies listed in their previous source water protection plan, to consider if any of them should be adopted and incorporated in this updated plan. **Table 9** provides a brief statement summarizing the status of the recommended strategies. **Table 9** also lists strategies from a previous plan that are being incorporated in this plan update.

When considering source management strategies and education and outreach strategies, this utility has considered how and when the strategies will be implemented. The initial step in implementation is to establish responsible parties and timelines to implement the strategies. The water utility, working in conjunction with the Protection Team members, can determine the best process for completing activities within the projected time periods. Additional meetings may be needed during the initial effort to complete activities, after which the Protection Team should consider meeting annually to review and update the Source Water Protection Plan. A system of regular updates should be included in every implementation plan.

Proposed commitments and schedules may change but should be well documented and reported to the local stakeholders. If possible, utilities should include cost estimates for strategies to better plan for implementation and possible funding opportunities. Keyser City Of has developed an implementation plan for priority concerns listed in **Table 8**. The responsible team member, timeline, and potential cost of each strategy are presented in **Table 9**. Note: Because timelines may change, future plan updates should describe the status of each strategy and explain the lack of progress.

Table 8. Priority PSSCs or Critical Areas

PSSC or Critical Area	Priority Number	Reason for Concern
Lumber Mills	1	Several lumber facilities are located within the ZCC. At least one of these facilities has caught fire in the past. The water from the fire-fighting entered the surface water and made its way into the treatment plant. These facilities treated the lumber in the past. However, USEPA has since required the lumber treatment sites to be cleaned up.
Underground Storage Tanks	2	Underground storage tanks are located at gas stations within the ZCC. A spill or leak at one of these tanks could migrate into the surface water. Another concern is underground storage tanks that have not been located, such as those at old gas station sites.
Wal-Mart Gas Station and Parking Lot	3	Storm water runoff from the parking lot and gas station area can make its way into the surface waters carrying any contamination with it.
Marcellus Shale Well	4	Fracturing fluid is typically water and sand that is forced into the shale to open cracks and fissures so more natural gas can flow out of the formation. Chemicals can also be added to this fluid. There are several methods to dispose of this fluid, such as deep injection and trucking the fluid to a treatment facility. Fracturing water can migrate or be spilled into the source water. The well site shown on Figure 2 of Appendix B has not been field verified.
Other Municipal Activities	5	Municipal facilities, such as parks or maintenance buildings, can house fertilizers, pesticides, or herbicides. Materials used for road maintenance and cleaning can also contaminate the surface waters.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Lumber Mills	The City of Keyser will work with the Lumber Company to plan/design/implement methods to control impacts to surface waters.	City of Keyser	Ongoing		Meetings with owner.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Wal-Mart Gas Station and Parking Lot	The City of Keyser will consider obtaining storm water information for the Wal-Mart parking lot and gas station areas. Additional information might also be obtained from the of WVDEP's Underground Injection Control program.	City of Keyser	Ongoing		Meeting with owner.
Other Municipal Activities	The City of Keyser will work to ensure that salt and other material stockpiles are kept covered and on an impervious surface. They will maintain compliance with hazardous waste storage and disposal rules. Keyser will consider implementing best management practices at municipal facilities.	City of Keyser	Ongoing		Meeting with owners

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Marcellus Shale Well	The City of Keyser should consider verifying the location of the Marcellus Shale Well in their SWPA. Chesapeake Appalachia, LLC is listed as the operator of this well. The City could contact the operating company to determine what activities are occurring at the site. They may also consider installing continuous monitoring equipment upstream of the intake to alert the operator before contamination reaches the intake and enters the plant. The system should continue correspondence with the WV DEP in order to obtain information about newly permitted wells in their SWPA and keep up to date on potential new regulations.	City of Keyser	Ongoing		Early warning monitoring system.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Underground Storage Tanks	The utility will monitor compliance with existing regulations through inspections and/or contact with regulatory agencies (such as the local fire department, State Fire Marshal, or WVDEP). The City of Keyser will consider providing owners or operators with copies of material on underground storage tank maintenance. Also consider obtaining Groundwater Protection Plans (GPPs) for the gas stations.	City of Keyser	Ongoing		Meetings with owner. Educational material mail outs.

10.0 EDUCATION AND OUTREACH STRATEGIES

The goal of education and outreach is to raise awareness of the need to protect drinking water supplies and build support for implementation strategies. Education and outreach activities will also ensure that affected citizens and other local stakeholders are kept informed and provided an opportunity to contribute to the development of the source water protection plan. Keyser City Of has created an Education and Outreach plan that describes activities it has either already implemented or could implement in the future to keep the local community involved in protecting their source of drinking water. This information can be found in **Table 10**.

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Media Campaign	The City of Keyser can work with the local newspapers to provide source water and drinking water information in the local newspapers.	City of Keyser	Not Started		Newspaper costs
Media Campaign	n/a	n/a	Not Started		

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Brochures, Pamphlets, and Letters	The utility can send a letter and/or brochure providing educational information to residences and businesses. These will alert the recipient of the need for source water protection and conservation. Businesses that use greater-thanhousehold quantities of regulated substances may receive a different letter. Funding for the brochures may be available through the Wellhead and Source Water Protection Grant Program. Several organizations provide information and resources on the internet, related to certain concerns and potential contaminant sources. The utility will consider obtaining these materials when needed, to educate the community. Some of these include: The Source Water Collaborative has released an educational brochure building tool to assist with creating custom brochures targeting local decision makers. This tool is available at: http://www.yourwateryourdecision.org and may assist in community planning and development. US EPA Water Sense Simple Steps to Save Water (EPA-832-F-07-011) presents benefits of conserving water. Focusing not only on	City of Keyser	Ongoing	City currently has brochures available at City Hall. City will review information provided by WVRWA as to which brochures, pamphlets they would like to have available.	Printout of the brochures / pamphlets. Mail outs.

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
	the environment, but also on the financial savings associated with conservation. The brochure can be viewed at: http://www.epa.gov/watersense/docs/ws_simplest eps508.pdf				
Brochures, Pamphlets, and Letters	n/a	n/a	Not Started		
Brochures, Pamphlets, and Letters	n/a	n/a	Not Started		
Brochures, Pamphlets, and Letters	n/a	n/a	Not Started		
Brochures, Pamphlets, and Letters	n/a	n/a	Not Started		

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Public Meeting	The City of Keyser can hold an informational meeting with local residents about source water protection efforts. The meeting will increase awareness of the connection between land use and drinking water quality. This meeting could be structured as a water fair/public event with drinking water displays and activities. This can be combined with activities of the local watershed associations.	City of Keyser	Ongoing	The protection team is interested in adding the SWPP to the agenda of regular council meetings to provide updates. Possibly on a semi-annual basis.	
Emergency Planning and Coordination	The utility will participate with local fire departments and County Emergency Services on a regular basis. This will ensure that all the agencies are in constant communication with one another and prepared in the event of an emergency.	City of Keyser	Ongoing		
Plant Tours	The public water system staff can provide tours of the water plant to interested organizations such as watershed groups, schools, and civic organizations. Tours will be offered as requested. In addition, the staff should organize a tour with local Emergency Responders to make them familiar with the facilities in the event of an emergency.	City of Keyser / Water Operators	Ongoing	2014 – tour for local boy scouts, Royal Rangers, and local girl scouts. 2015 tour for Vo Tech class.	

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Plant Tours	n/a	n/a	Not Started		
Consumer Confidence Report	The utility publishes a Consumer Confidence Report (CCR) annually, as required by the Safe Drinking Water Act, which is sent to all water customers. Information concerning the Source Water Protection Plan is included in the CCR.	City of Keyser	Ongoing	City currently provides CCR	Mail outs
Consumer Confidence Report	n/a	n/a	Not Started		
CCR Pharmaceuticals	Due to recent heightened concerns about the effects of pharmaceuticals in surface water bodies, the utility can also include in the 2010 CCR information about pharmaceuticals and how to properly dispose of them. The City of Keyser may obtain and distribute pamphlets developed by the Ohio River Valley Water Sanitation Commission regarding pharmaceutical disposal. This pamphlet can be viewed and possibly ordered from: http://orsanco.org/index.php/brochures	City of Keyser	Ongoing	City currently provides CCR	Mail outs

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
School Curricula	The utility could work with the school system to incorporate source water activities into the school curricula. One example of such curricula is Project WET. For more information regarding free workshops to educate area teachers on Project WET, visit http://www.dep.wv.gov/WWE/getinvolved/WET/Pages/default.aspx, or contact the WV DEP at 304-926-0495. In addition, the US EPA offers free educational materials for teachers and students, including classroom lessons, fact sheets, and interactive games and activities, for grades K-12. These materials can be accessed at the following websites. For general source water protection: http://www.epa.gov/safewater/kids/index.html. For water conservation: http://www.epa.gov/watersense/resources/educational_materials.html Similar protection and conservation related resources can be found at the Groundwater Foundation website; http://www.groundwater.org/kc/kc.html	City of Keyser	Ongoing	2015 – Plant tour with Mr. Miller's Vo Tech class	Printout material for schools
School Curricula	n/a	n/a	Not Started		

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
School Curricula	n/a	n/a	Not Started		
School Curricula	n/a	n/a	Not Started		
Drinking Water Protection Signs	The utility will consider erecting signs along roads and in public areas to alert the public to the SWPA and what to do in case of accidental spills. SWAP Program has a template that should be utilized providing emergency contact information. Contact the SWAP program at 304-558-2981 for more information on possible financial support and information regarding highway right-of-way restrictions.	City of Keyser	Not Started		Making and posting of signs.
Drinking Water Protection Signs	n/a	n/a	Not Started		

11.0 CONTINGENCY PLAN

The goal of contingency planning is to identify and document how the utility will prepare for and respond to any drinking water shortages or emergencies that may occur due to short and long term water interruption, or incidents of spill or contamination. During contingency planning, utilities should examine their capacity to protect their intake, treatment, and distribution system from contamination. They should also review their ability to use alternative sources and minimize water loss, as well as their ability to operate during power outages. In addition, utilities should report the feasibility of establishing an early warning monitoring system and meeting future water demands.

Isolating or diverting any possible contaminant from the intake for a public water system is an important strategy in the event of an emergency. One commonly used method of diverting contaminants from an intake is establishing booms around the intake. This can be effective, but only for contaminants that float on the surface of the water. Alternatively, utilities can choose to pump floating contaminants from the water or chemically neutralize the contaminant before it enters the treatment facility.

Public utilities using surface sources should be able to close the intake by one means or another. However, depending upon the system, methods for doing so could vary greatly and include closing valves, lowering hatches or gates, raising the intake piping out of the water, or shutting down pumps. Systems should have plans in place in advance as to the best method to protect the intake and treatment facility. Utilities may benefit from turning off pumps and, if possible, closing the intake opening to prevent contaminants from entering the piping leading to the pumps. Utilities should also have a plan in place to sample raw water to identify the movement of a contaminant plume and allow for maximum pumping time before shutting down an intake (See Early Warning Monitoring System). The amount of time that an intake can remain closed depends on the water infrastructure and should be determined by the utility before an emergency occurs. The longer an intake can remain closed in such a case, the better.

Raw and treated water storage capacity also becomes extremely important in the event of such an emergency. Storage capacity can directly determine how effectively a water system can respond to a contamination event and how long an intake can remain closed. Information regarding the water shortage response capability of Keyser City Of is provided in **Table 11**.

11.1. RESPONSE NETWORKS AND COMMUNICATION

PSSC data from some agencies (ex. WVDHSEM, WVDEP, etc.) may be restricted due to the sensitive nature of the data. Locational data will be provided to the public water utility. However, to obtain specific details regarding contaminants, (such as information included in Tier II reports), water utilities should contact the local emergency planning commission (LEPC) or agencies, directly. While the maps and lists of the PSSCs and regulated sites are to be maintained in a confidential manner, these data are provided in **Appendix A. Figures** for internal review and planning uses only.

Table 11. Keyser City Of Water Shortage Response Capacity

Can the water utility isolate or divert contamination from the intake and groundwater supply?	Yes
Describe the results of an examination and analysis of the public water system's ability to isolate or divert contaminated waters from its surface water intake or groundwater supply:	City of Keyser can isolate the intake by manually closing valves.
Describe the results of an examination and analysis of the public water system's existing ability to switch to an alternative water source or intake in the event of contamination of its primary water source:	N/A
Is the Utility able to close the water intake in the event of a spill?	Yes
How long can the Utility keep the intake closed?	Appx 2.65 days based on avg production
Describe the process to close the intake:	Manual Valve closing at the intake structure.
Describe the treated water system's storage capacity of the water system:	Treated water is in five (5) storage tanks
Gallons of storage capacity (raw water)	0
Gallons of storage capacity (treated water)	0
Is the Utility a member of WVRWA Emergency Response Team?:	Yes
Is the Utility a member of WV-WARN?:	Yes
List other agreements to provide receive assistance in case of emergency:	N/A

11.2. OPERATION DURING LOSS OF POWER

Keyser City Of analyzed its ability to operate effectively during a loss of power. This involved ensuring a means to supply water through treatment, storage, and distribution without creating a public health emergency. Information regarding the utility's capacity for operation during power outages is summarized in **Table 12**.

Table 12. Generator Capacity

Can you connect to a generator at the intake/wellhead?:	No
Please provide a scenario that best describes your system:	
What do you have (KW)?	
What do you need (KW)?	
Can you connect to a generator at the treatment facility?:	Yes
Please provide a scenario that best describes your system:	Existing Gen Set at WTP sized to operate entire plant.
What do you have (KW)?	250.00
What do you need (KW)?	250.00
Can you connect to a generator at the distribution system?:	Yes

Please provide a scenario that best describes your system:		Booster Station has permanent gen set on site.	
What do you have (KW)?		0.00	
What do you need (KW)?		0.00	
Does the utility have fuel on hand for generator?:		Yes	
Hours:		12	
Gallons:		660	
Provide a list of suppliers and alternate suppliers that could provide fuel in the event of an emergency:		Supplier	Phone Number
Does the utility test the generator(s) periodically?:		Yes	
Does the utility routinely maintain the generator(s)?:		Yes	
If the Utility does not have generator or the ability to connect to a generator, describe plans to respond to power outages:		N/A	

11.3. FUTURE WATER SUPPLY NEEDS

When planning for potential emergencies and developing contingency plans, a utility needs to not only consider their current demands for treated water but also account for likely future needs. This could mean expanding current intake sources or developing new ones in the near future. This can be an expensive and time consuming process, and any water utility should take this into account when determining emergency preparedness. Keyser City Of has analyzed its ability to meet future water demands at current capacity, and this information is included in **Table 13**.

Table 13. Future Water Supply Needs for Keyser City Of

Is the Utility able to meet water demands with the current capacity for the next five years?	Yes
Explain how you plan to do so:	

11.4. WATER LOSS CALCULATION

In any public water system there is a certain percentage of the total treated water that does not reach the customer. Some of this water is used in treatment plant processes such as back washing filters or flushing piping, but there is usually at least a small percentage that goes unaccounted for. To measure and report on this unaccounted for water, a public utility must use the method described in the Public Service Commission's rule, Rules for the Government of Water Utilities, 150CSR7, section 5.6. The rule defines unaccounted for water as the volume of water introduced into the distribution system less all metered usage and all known non-metered usage which can be estimated with reasonable accuracy.

To further clarify, metered usages are most often those that are distributed to customers. Non-metered usages that are being estimated include usage by fire departments for fires or training, un-metered bulk sells, flushing to maintain the distribution system, and water used for backwashing filters and cleaning settling basins. By totaling the known metered and non-metered uses the utility calculates unaccounted for water. Note: To complete annual reports submitted to the PSC, utilities typically account for known water main breaks by estimating the amount of

water lost. However, for the purposes of the source water protection plan, any water lost due to leaks, even if the system is aware of how much water is lost at a main break, is not considered a use. Water lost through leaks and main breaks cannot be controlled during a water shortages or other emergencies and should be included in the calculation of percentage of water loss for purposes of the source water protection plan. The data in **Table 13** is taken from the most recently submitted Keyser City Of PSC Annual Report.

Table 14. Water Loss Information

Water pumped - Total Gallons:		302,612,000
*Water purchased - Total Gallons:		0
Total gallons of water pumped and purchased:		302,612,000
Total gallons of water loss accounted for except main leaks:	Mains, plaint, filters, flushing, etc - Total Gallons:	0
	Fire department - Total Gallons:	0
	Back washing - Total Gallons:	0
	Blowing settling basins - Total Gallons:	0
Total Accounted for Water Loss		0
Unaccounted for lost water - Total Gallons:		14,025,000
Water sold - Gallons:		239,462,000
Water Lost From Main Leaks:		49,125,000
Total Gallons of Unaccounted for Lost Water and Water Lost from Main Leaks:		63,150,000
Total percent unaccounted for water		21
Describe the measures to correct water loss greater than 15%:	the city is doing more aggressive leak detection and leak prevention	

11.5. EARLY WARNING MONITORING SYSTEM

Public water utilities are required to provide an examination of the technical and economic feasibility of implementing an early warning monitoring system. Implementing an early warning monitoring system may be approached in different ways depending upon the water utility's resources and threats to the source water. A utility may install a continuous monitoring system that will provide real time information regarding water quality conditions. This would require utilities to analyze the data to establish what condition is indicative of a contamination event. Continuous monitoring will provide results for a predetermined set of parameters. The more parameters that are being monitored, the more sophisticated the monitoring equipment will need to be. When establishing a continuous monitoring system, the utility should consider the logistics of placing and maintaining the equipment, and receiving output data from the equipment.

Alternately, or in addition, a utility may also pull periodic grab samples on a regular basis, or in case of a reported incident. The grab samples may be analyzed for specific contaminants. A utility should examine their PSSCs to determine what chemical contaminants could pose a threat to the water source. If possible, the utility should plan in advance how those contaminants will be detected. Consideration should be given to where samples will be collected, the preservations and hold times for samples, available laboratories to analyze samples, and costs associated with the sampling event. Regardless of the type of monitoring (continuous or grab), utilities should collect samples for their source throughout the year to better understand the baseline water quality conditions and natural

seasonal fluctuations. Establishing a baseline will help determine if changes in the water quality are indicative of a contamination event and inform the needed response.

Every utility should establish a system or process for receiving or detecting chemical threats with sufficient time to respond to protect the treatment facility and public health. All approaches to receiving and responding to an early warning should incorporate communication with facility owners and operators that pose a threat to the water quality, with state and local emergency response agencies, with surrounding water utilities, and with the public. Communication plays an important role in knowing how to interpret data and how to respond.

Keyser City Of has analyzed its ability to monitor for and detect potential contaminants that could impact its source water. Information regarding this utility's early warning monitoring system capabilities is provided in **Table 15** and in **Appendix B**.

Table 15. Early Warning Monitoring System Capabilities

Does your system currently receive spill notifications from a state agency, neighboring water system, local emergency responders, or other facilities?			Yes
From whom do you receive notices?			Yes – DEP Email Notifications
Are you aware of any facilities, land uses, or critical areas within your protection areas where chemical contaminants could be released or spilled?			Yes
Are you prepared to detect potential contaminants if notified of a spill?			Yes
List laboratories (and contact information) on whom you would rely to analyze water samples in case of a reported spill.	Laboratories		
	Name		Phone Number
	REIC		(304)241-5861
	WVDHHR		(304)725-0348
Do you have an understanding of baseline or normal conditions for your source water uality that accounts for seasonal fluctuations?			Yes
Does your utility (aside from turbidity monitoring) currently monitor your raw water through continuous monitoring at the surface water intake or groundwater source to detect changes in water quality that could indicate contamination?			Yes
Does your utility collect periodic grab samples (ex. possess reserved sample bottles, on-call laboratory services, and trained personnel) in response to a spill notification or to investigate changes in water quality that could indicate contamination?			Yes
Please explain:			Grab samples
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	Capital Cost:		68,778
	O&M Cost:		9,187
Do you serve more than 100,000 customers?			No
Does your system currently receive spill notifications from a state agency, neighboring water system, local emergency responders, or other facilities?			Yes

Are you prepared to detect potential contaminants if notified of a spill?	Yes
Please describe the methods you use to monbitor at the same technical levels utilized by ORSANCO:	

12.0 SINGLE SOURCE FEASIBILITY STUDY

If a public water utility's water supply plant is served by a single–source intake to a surface water source of supply or a surface water influenced source of supply, the submitted source water protection plan must also include an examination and analysis of the technical and economic feasibility of alternative sources of water to provide continued safe and reliable public water service in the event that its primary source of supply is detrimentally affected by contamination, release, spill event or other reason. These alternatives may include a secondary intake, two days of additional raw or treated water storage, an interconnection with neighboring systems, or other options identified on a local level. Note: a suitable secondary intake would draw water supplies from a substantially different location or water source.

To accomplish this requirement, utilities should examine all existing or possible alternatives and rank them by their technical, economic, and environmental feasibility. To have a consistent and complete method for ranking alternatives, WVBPH has developed a feasibility study guide. This guide provides several criteria to consider for each category, organized in a Feasibility Study Matrix. By completing the Feasibility Study Matrix, utilities will demonstrate the process used to examine the feasibility of each alternative and document scores that compare the alternatives. The Feasibility Study matrix and summary of the results are presented in an alternatives feasibility study attached as **Appendix D**.

13.0 COMMUNICATION PLAN

Keyser City Of has also developed a Communication Plan that documents the manner in which the public water utility, working in concert with state and local emergency response agencies, shall notify the local health agencies and the public of the initial spill or contamination event and provide updated information related to any contamination or impairment of the system's drinking water supply. The initial notification to the public will occur in any event no later than thirty minutes after the public water system becomes aware of the spill, release, or potential contamination of the public water system. A copy of the source water protection plan and the Communication Plan has been provided to the local fire department. Keyser City Of will update the Communication Plan as needed to ensure contact information is up to date.

Procedures should be in place to effectively react to the kinds of catastrophic spills that can reasonably be predicted at the source location or within the SWPA. The chain-of-command, notification procedures and response actions should be known by all water system employees.

The WVBPH has developed a recommended communication plan template that provides a tiered incident communication process to provide a universal system of alert levels to utilities and water system managers. The comprehensive Communication Plan for Keyser City Of is attached as **Appendix C** for internal review and planning purposes only.

The West Virginia Department of Environmental Protection is capable of providing expertise and assistance related to prevention, containment, and clean-up of chemical spills. The West Virginia Department of Environmental Protection Emergency Response 24-hour Phone is 1-800-642-3074. The West Virginia Department of Environmental Protection also operates an upstream distance estimator that can be used to determine the distance from a spill site to the closest public water supply surface water intake.

14.0 EMERGENCY RESPONSE

A public water utility must be prepared for any number of emergency scenarios and events that would require immediate response. It is imperative that information about key contacts, emergency services, and downstream water systems be posted and readily available in the event of an emergency. Elements of this source water protection plan, such as the contingency planning and communication plan, may contain similar information to the utility's emergency response plan. However, the emergency response plan is to be kept confidential and is not included in this source water protection plan. An Emergency Short Form is included in **Appendix C** to support the Communicate Plan by providing quick access to important information about emergency response and are to be used for internal review and planning purposes only.

15.0 CONCLUSION

This report represents a detailed explanation of the required elements of Keyser City Of's Source Water Protection Plan. Any supporting documentation or other materials that the utility considers relevant to their plan can be found in **Appendix E**.

This source water protection plan is intended to help prepare community public water systems all over West Virginia to properly handle any emergencies that might compromise the quality of the system's source water supply. It is imperative that this plan is updated as often as necessary to reflect the changing circumstances within the water system. The protection team should continue to meet regularly and continue to engage the public whenever possible. Communities taking local responsibility for the quality of their source water is the most effective way to prevent contamination and protect a water system against contaminated drinking water. Community cooperation, sufficient preparation, and accurate monitoring are all critical components of this source water protection plan, and a multi-faceted approach is the only way to ensure that a system is as protected as possible against source water degradation.

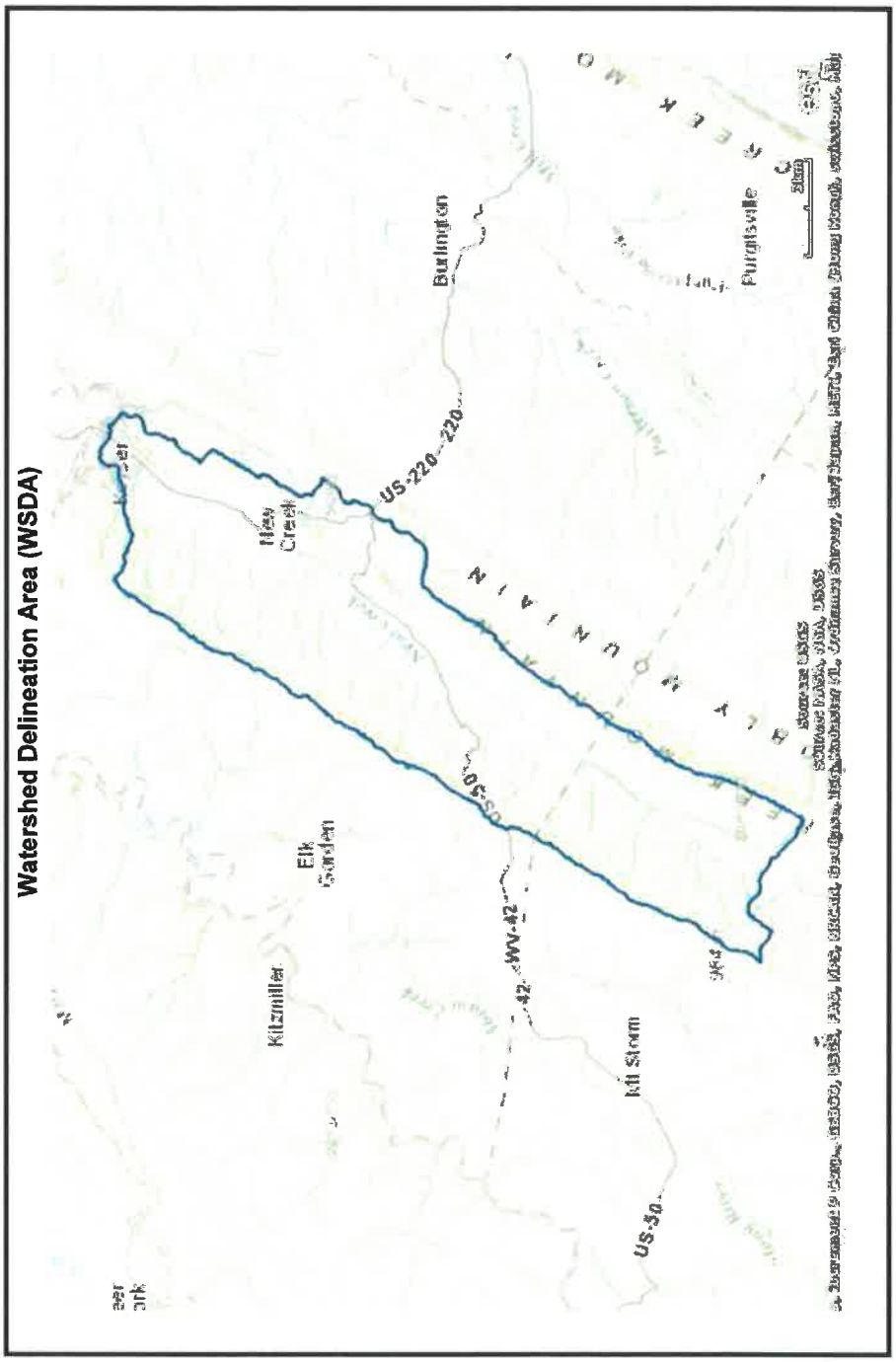
APPENDIX A. FIGURES AND TABLES

Water Source / Delineation

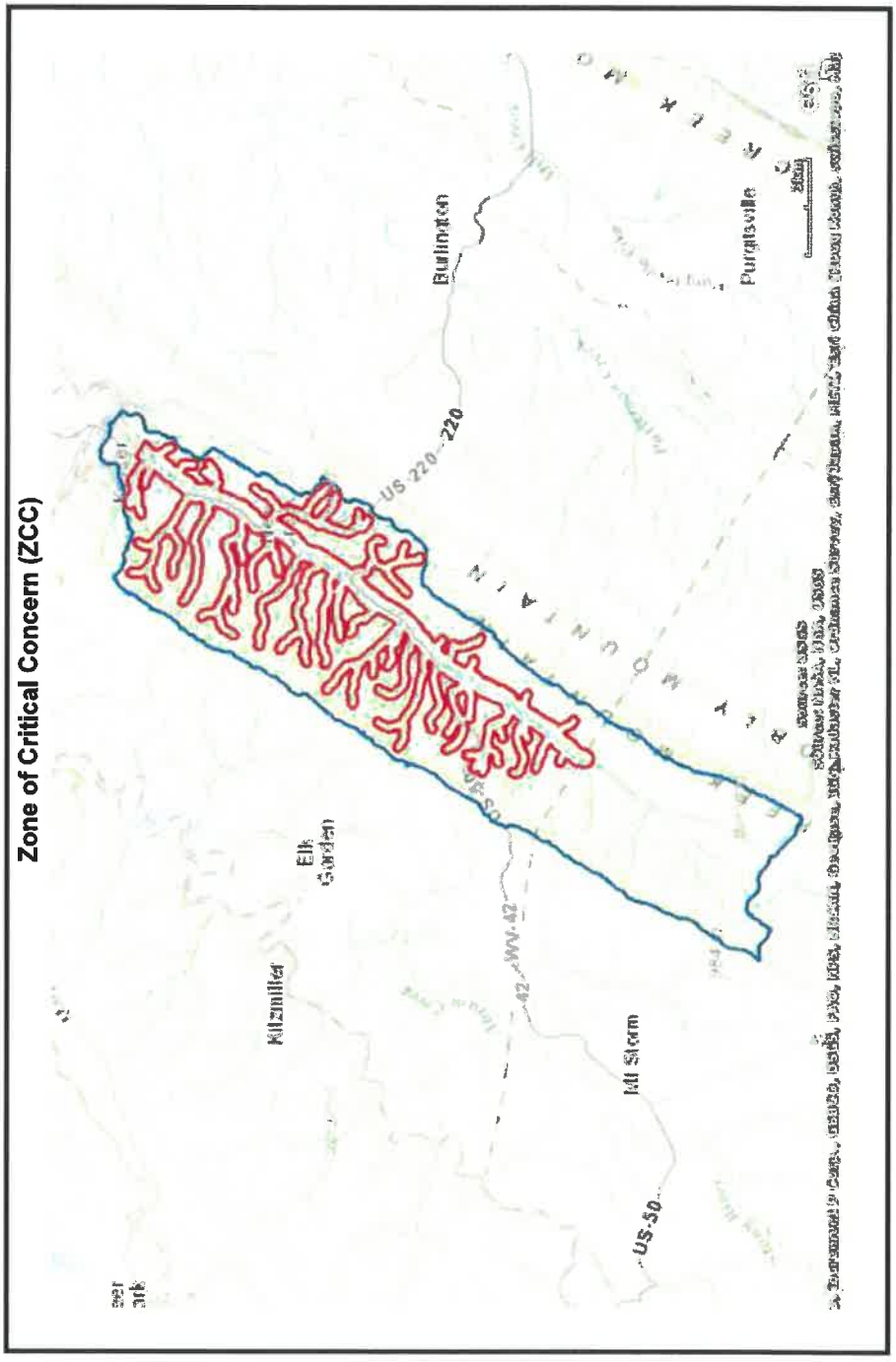
Surface Water Sources

Intake: New Creek

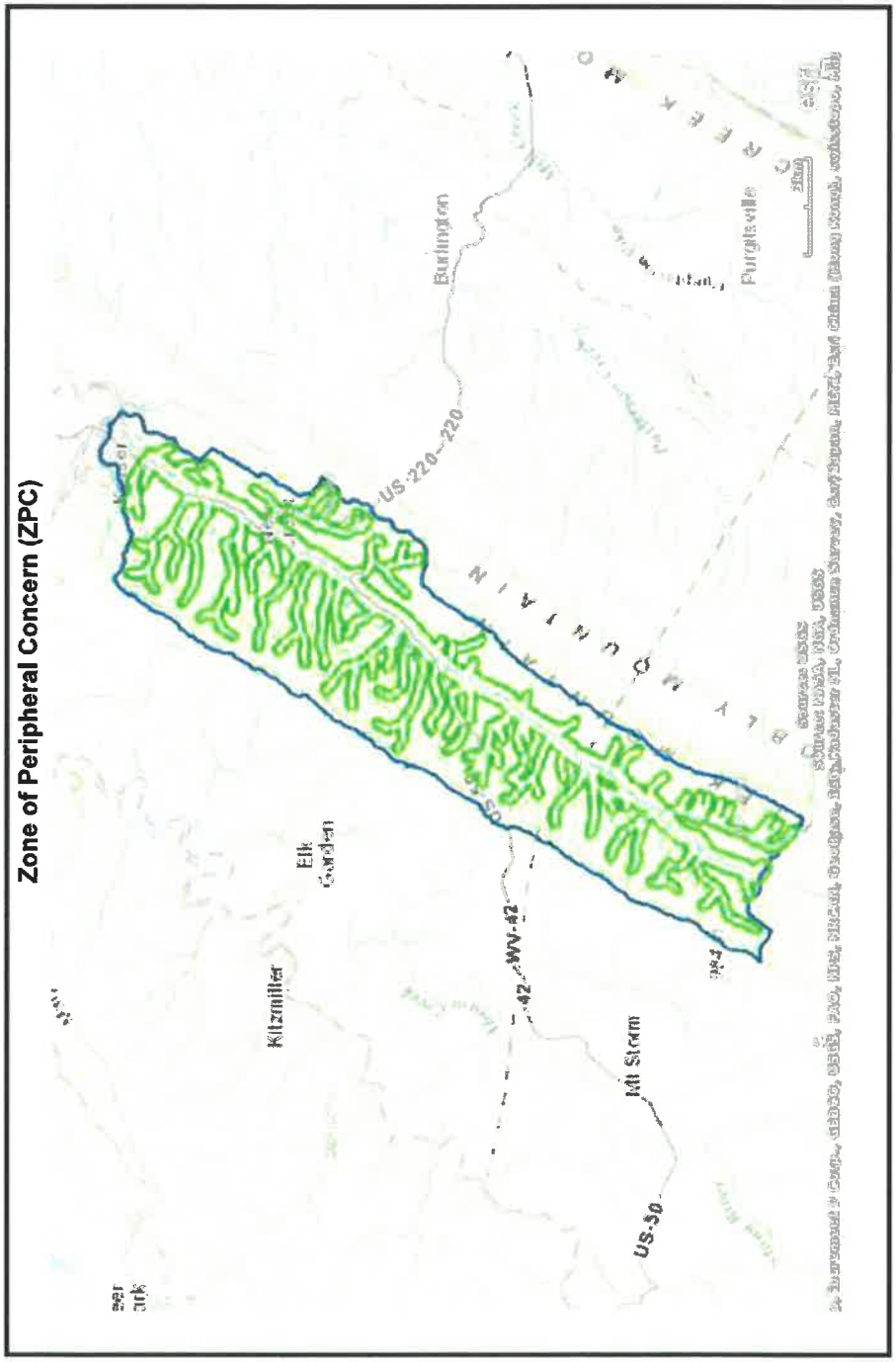
Map of watershed delineation area



Map of zone of critical Concerns



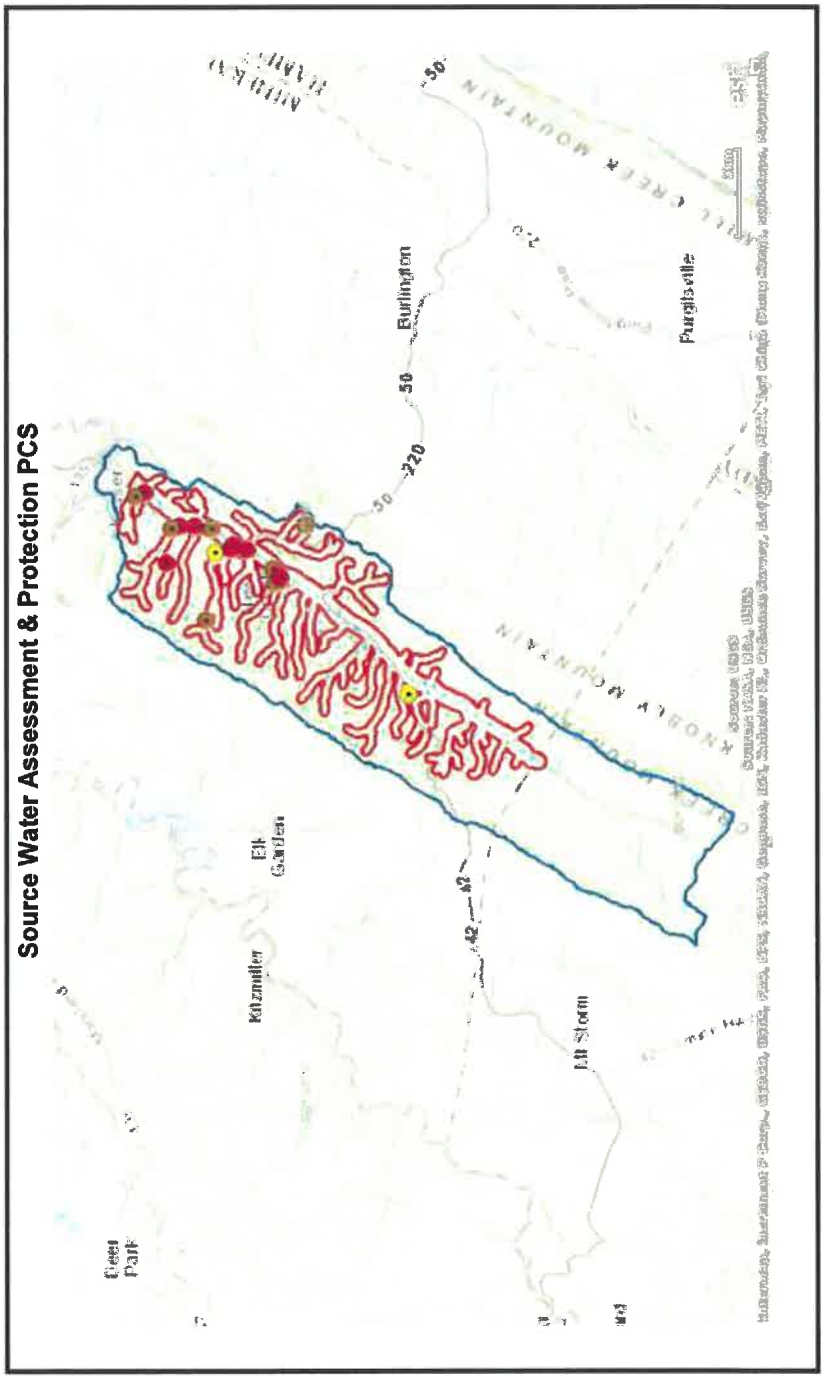
Map of zone of peripheral Concerns



PSSC Maps

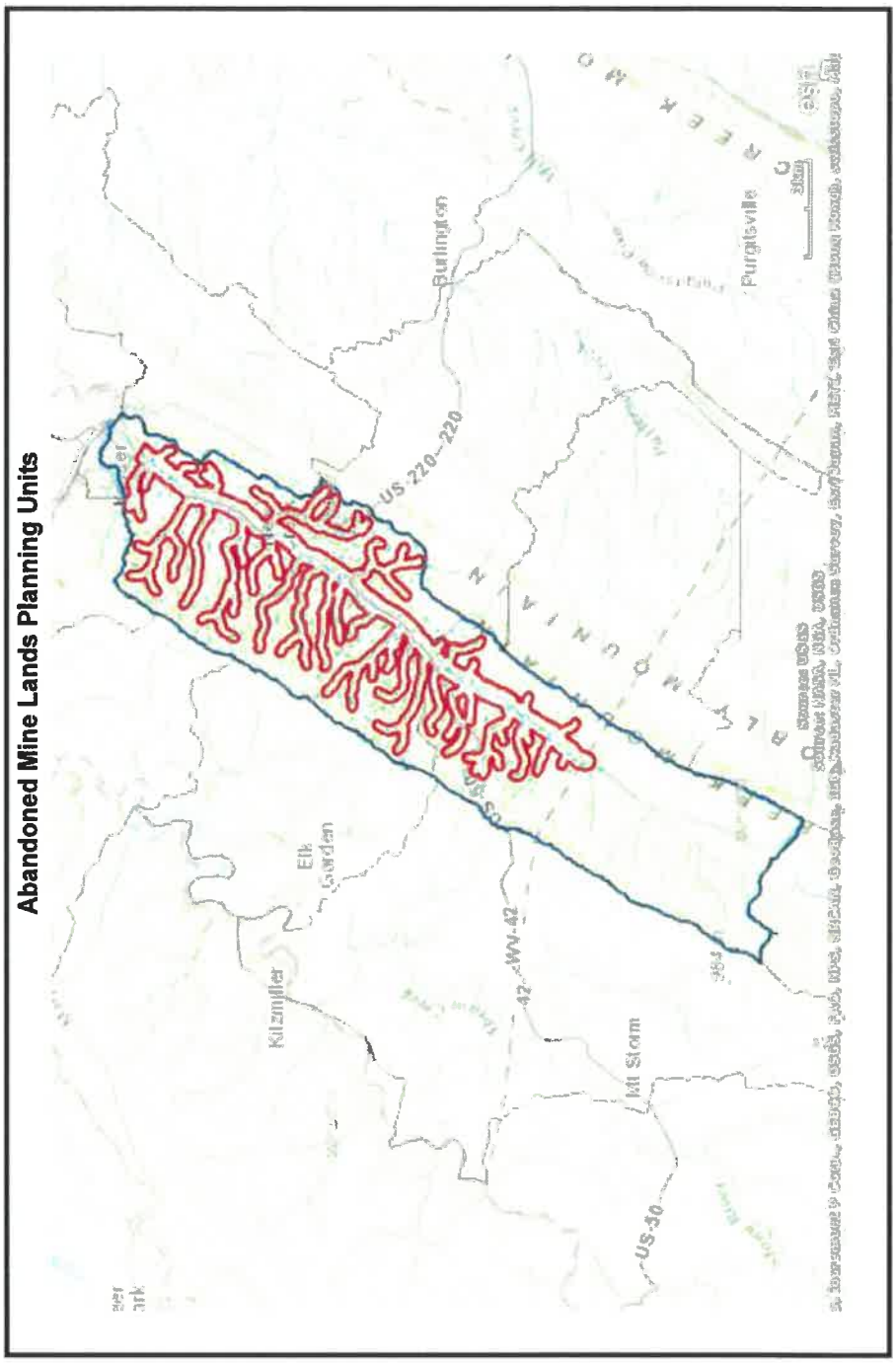
Local and Regional PSSC Map

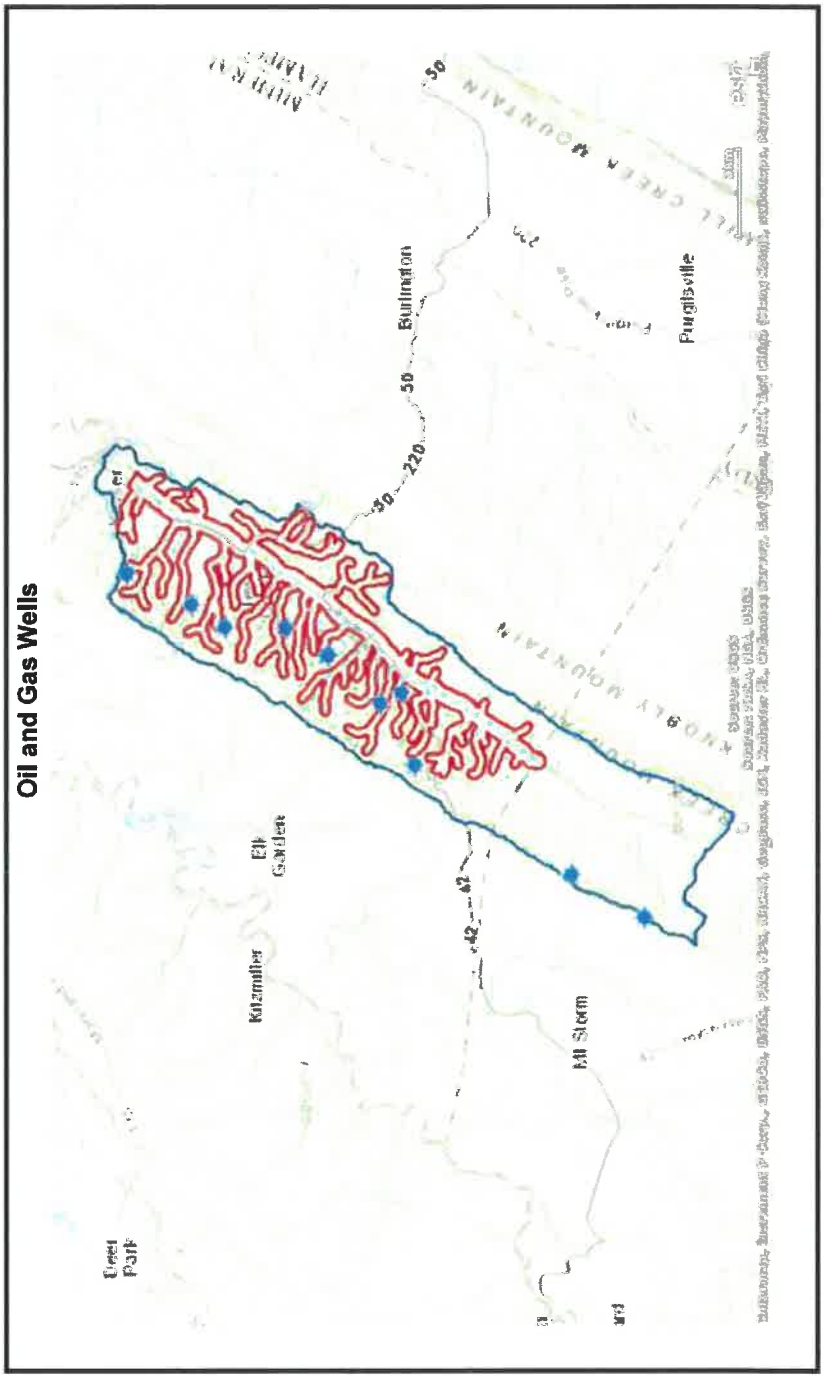
Map of Locally Identified PSSCs

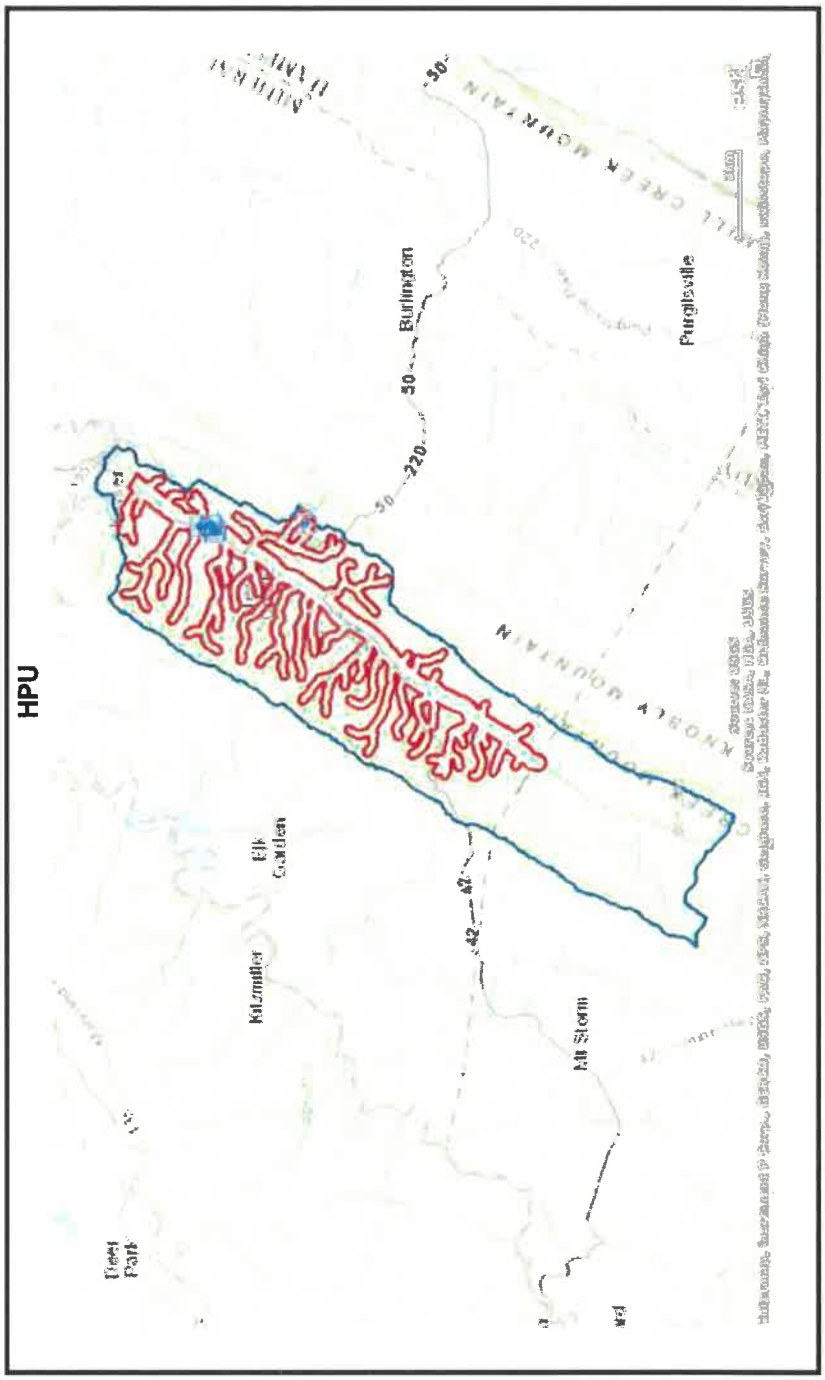

Source Water Assessment & Protection PCS
Burlington
Purgitsville
Elk Garden
Kitzmiller
Deer Park
Elk Storm
50
220
42

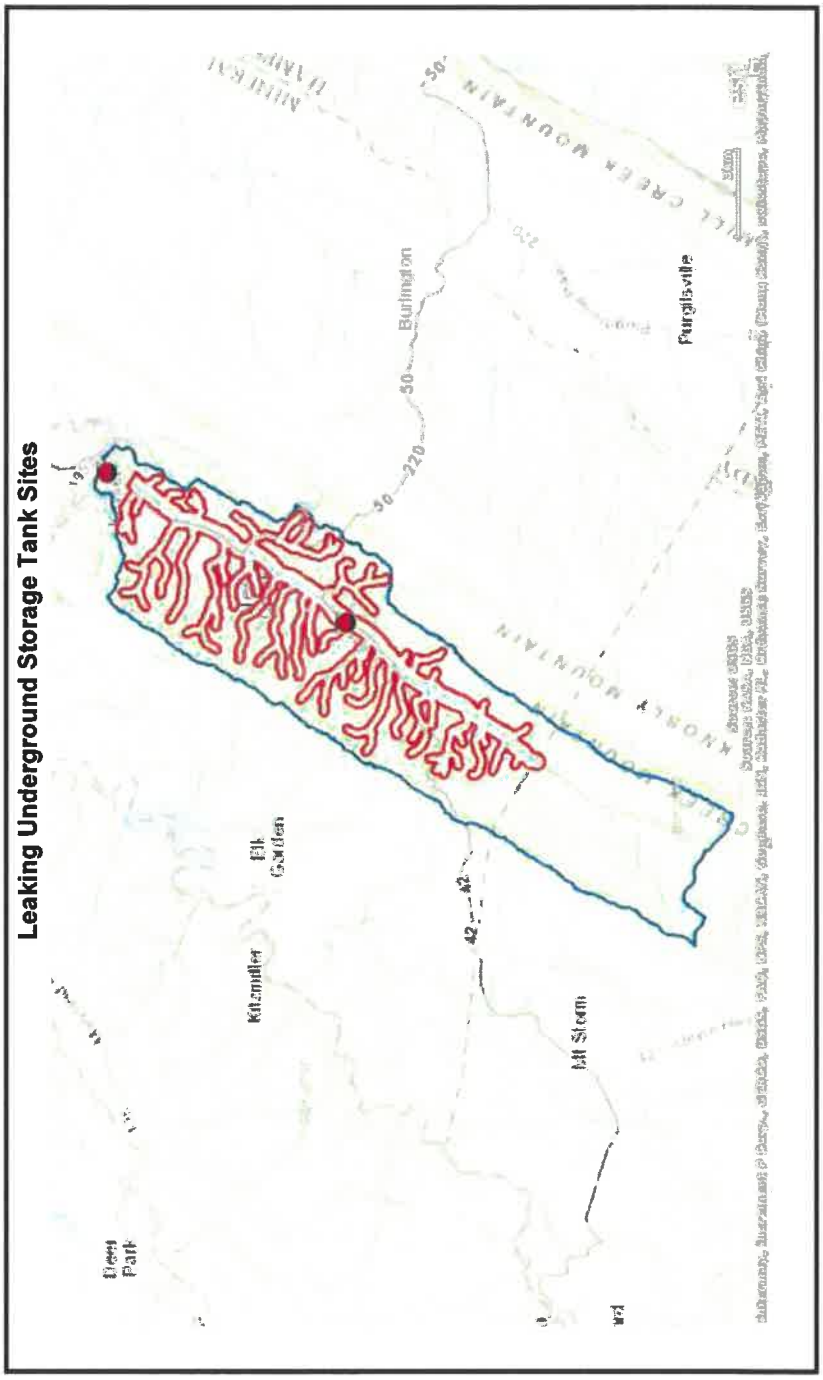
Regulated PSSC Map

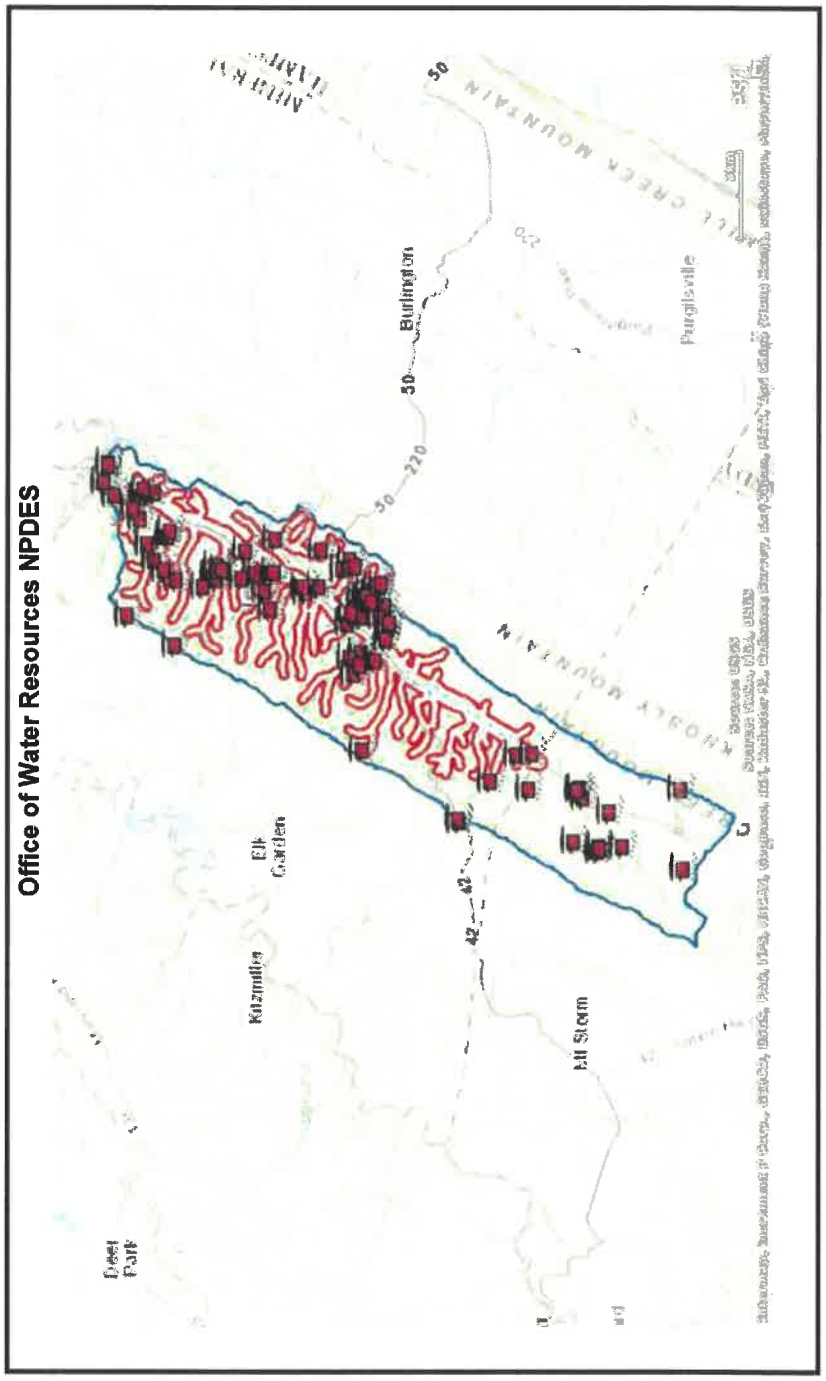
Map of Regulated PSSCs

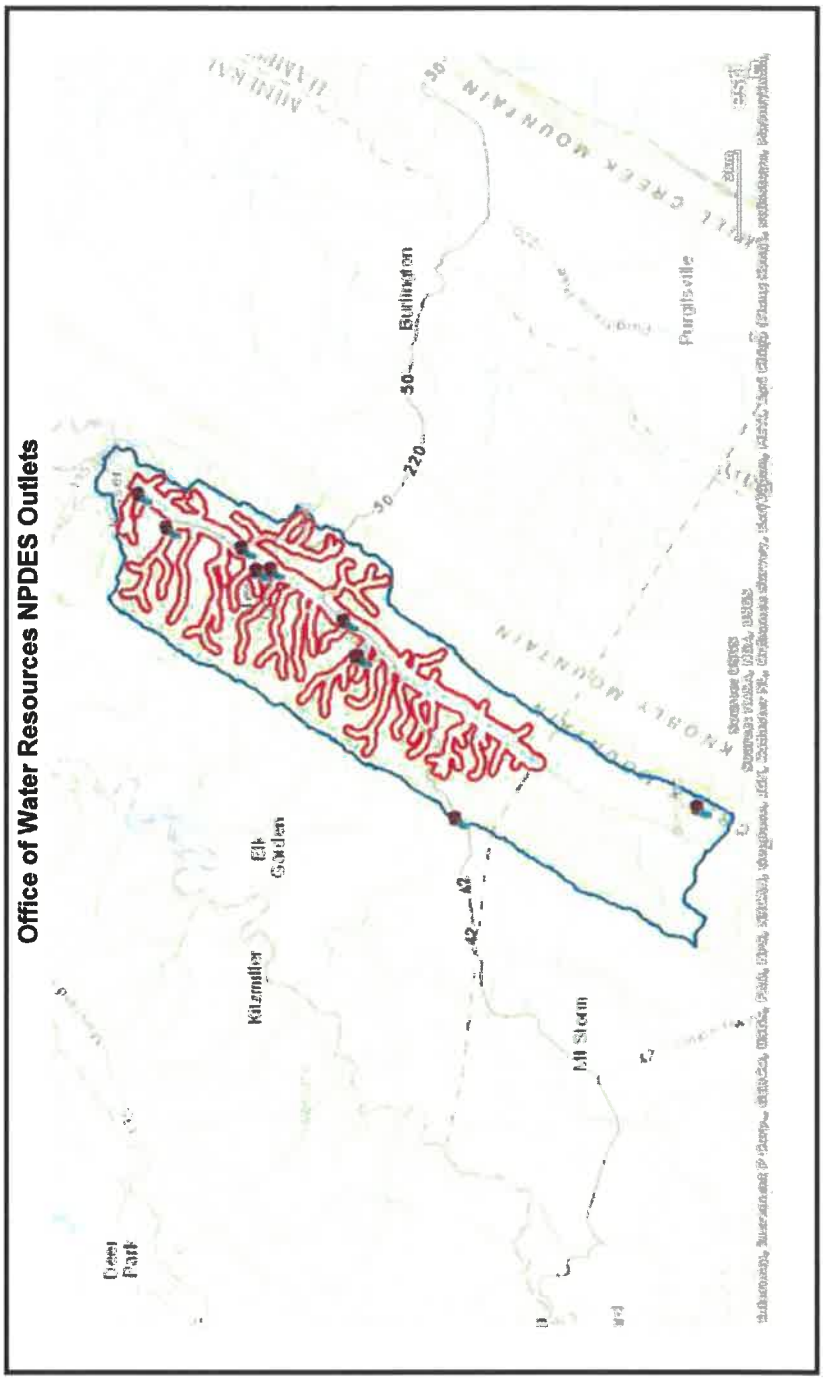

Abandoned Mine Lands Planning Units
Burlington
Purgitsville
US 220
WV-42
Elk Garden
Kitzmiller
Mt Storm
US-50

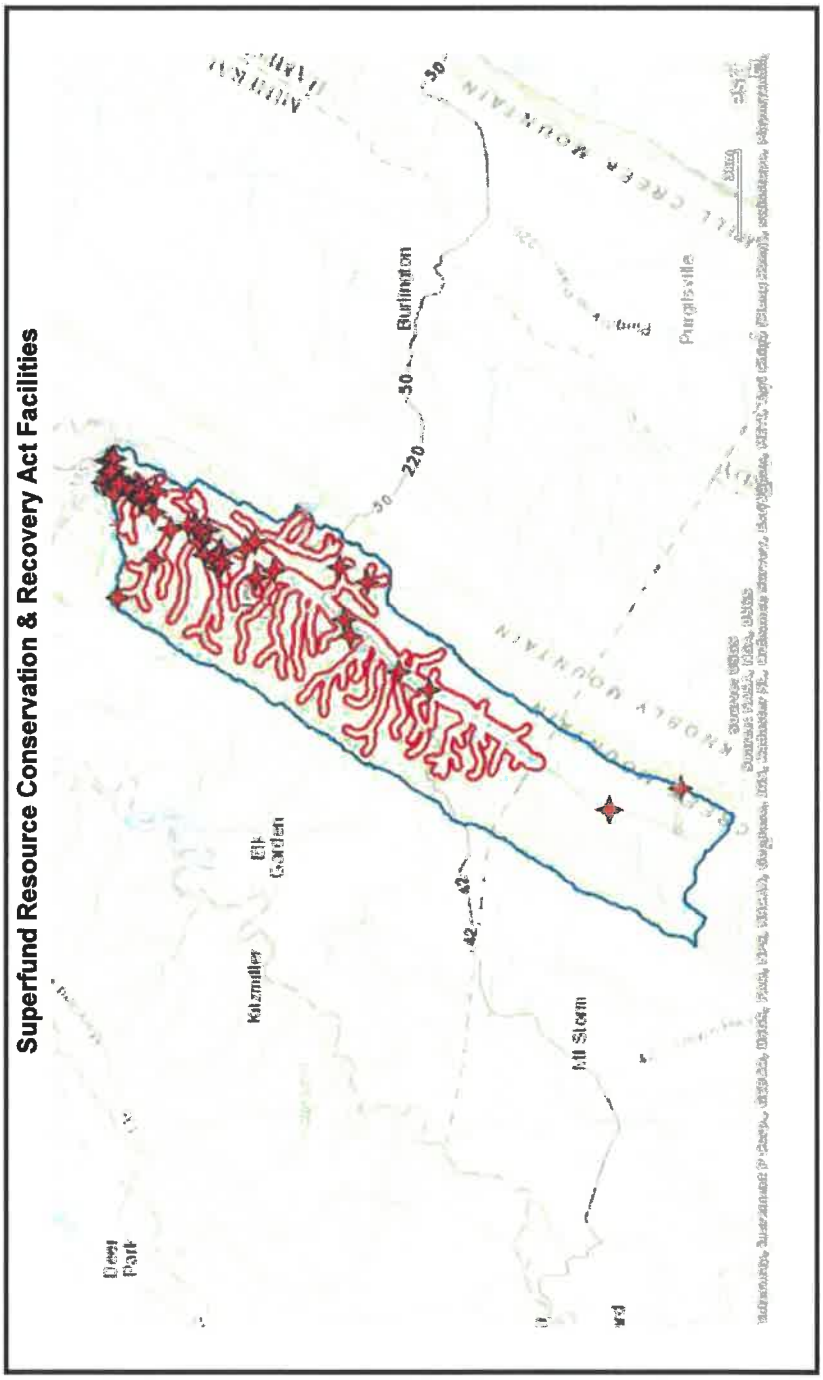

Oil and Gas Wells
Bullington
Pughsville
El Gabriel
Kitzmiller
Mt Storm
Deer Park


HPU
Burlington
Purgitsville
Elk Garden
Kitzmiller
Mt Storm
Deer Park


Leaking Underground Storage Tank Sites
Burlington
Purgitsville
Elk Garden
Kitzmiller
Mt Storm
Deer Park


Office of Water Resources NPDES
Burlington
Purgitsville
Elk Garden
Kitzmiller
Mt Storm
Deer Park
50
220
42


Office of Water Resources NPDES Outlets
Burlington
Purgitsville
Elk Garden
Kitzmiller
Mt Storm
Deer Park


Superfund Resource Conservation & Recovery Act Facilities
Burlington
Purgitsville
Elk Garden
Kitzmiller
Mt Storm
Deer Park

PSSC Lists

Local and Regional PSSC List

Table 7. Locally Identified Potential Sources of Significant Contamination

PSSC Number	Map Code	Site Name	Site Description	Comments
NO NEW PSC'S SINCE PREVIOUS REPORT				
SEE APPENDIX A				

List of Locally Identified PSSCs

SOURCE WATER ASSESSMENT & PROTECTION PCS

OBJECTID	SITE_NAME	SITEDESCRIPTION	LATITUDE	LONGITUDE
1	84 Lumber Company store and yard	Hardware/lumber/parts stores	39.41743	-79.00039
2	Quail Valley Estates subdivision	Residential (single family homes)	39.40525	-79.01191
3	Junk Yard	Junk yards, scrap and auto	39.42171	-79.01676
4	Sisler Lumber Company	Hardware/lumber/parts stores	39.39442	-79.01074
5	Allegheny Quarries Company quarry	Quarry	39.40666	-79.00169
6	Valley Redi-Mix Keyser Cement Plant	Cement/concrete plants	39.42	-79.0015
7	Kessel Lumber wood treatment plant	Wood preserving/treatment facilities	39.3847	-79.0253
8	Fairfax Sand and Stone Company quarry	Quarry	39.375	-79
9	Kessel Lumber wood mill	Wood/pulp/paper mills	39.38565	-79.01944
10	Wal-Mart Gas Station	Gas Stations	39.40004	-79.01036
11	2 - Tanks with concrete containment	Above Ground Storage Tanks	39.39944398	-79.00883602
12	Car wash next to New Creek fire station	Car washes	39.38306012	-79.02293824
13	Sheetz gas station	Gas Stations	39.41194525	-79.00081538
14	Mineral County school bus depot	Fleet/truck/bus terminals	39.42894777	-78.98623589
15	Orgill, Inc Storm Water Construction Permit	Permitted Discharge Pipe (outfall)	39.4083	-79.0417
16	Diubaldo Trucking Company	Other	39.432187	-78.987483
17	Allegheny Motel	Pasture*	39.340458	-79.0738777
18	Allegheny Motel	Septic Systems (leach field)*	39.340401	-79.0738624

Regulated PSSC List

List of Regulated PSSCs

ABANDONED MINE LANDS PLANNING UNITS

OBJECTID	STATES	NFHAP_UNIT	PU_NUMBER	SHAPE_Leng	x	y	Shape_STArea__	Shape_STLength__	Shape_Length	Shape_Area
1	WV	Hartmanville	0	70054.15355	655864.3804	4351135.199	138045715.4	70054.15355	70054.15355	138045715.3
2	MD,WV	Piney Swamp Run-North Branch Potomac River	0	42174.64143	661780.5304	4368518.632	73004500.44	42174.64143	42174.64143	73004500.43
3	WV	Mountian View	0	40000.12445	662553.7883	4350634.329	65129839.4	40000.12445	40000.12445	65129839.16
4	MD,WV	Beryl	0	28425.35779	670163.9939	4370573.827	27907209.93	28425.35779	28425.35779	27907209.78
5	WV	Scherr	0	34535.52988	657175.2811	4340510.821	53725769.72	34535.52988	34535.52988	53725769.96
6	WV	Limestone	0	53347.69329	679192.0662	4366216.028	71736622.53	53347.69329	53347.69329	71736622.83
7	WV	Martin	0	46811.23425	667769.4107	4342697.418	72596867.87	46811.23425	46811.23425	72596867.85
8	WV	Mikes Run	0	40024.42549	669905.7842	4350302.894	74130611.03	40024.42549	40024.42549	74130610.81
9	WV	Antioch	0	63716.19735	674413.4892	4352340.256	82543775.11	63716.19735	63716.19735	82543775.09
10	MD,WV	Barnum	702485	37143.80683	662144.7034	4361556.416	49397966.17	37143.80683	37143.80683	49397965.99
11	WV	New Creek	0	44526.2144	668951.3787	4362275.84	76161026.09	44526.2144	44526.2144	76161026.14

OIL AND GAS WELLS

OBJECTID	PERMITID	COUNTY	PERMIT_TYP	ISSUE_DATE	COMPLETE_D	RESP_PARTY
1	5700093	57	NEWEL	NA	1/1/1900	COLUMBIA NATURAL RESOURCES, LLC
2	5700002	57	OTHRW	4/13/1967	NA	PPG INDUSTRIES INC
3	5700002	57	PLUG	5/26/1967	NA	PPG INDUSTRIES INC
4	5700088	57	OTHRW	NA	NA	UPLAND RESOURCES, INC.
5	5700016	57	FRACT	NA	NA	COLUMBIA GAS TRANSMISSION, LLC
6	5700087	57	OTHRW	NA	NA	UPLAND RESOURCES, INC.
7	2300030	23	NEWEL	2/1/1994	2/1/1994	COLUMBIA NATURAL RESOURCES, LLC
8	2300019	23	OTHRW	8/8/1987	NA	COLUMBIA NATURAL RESOURCES, LLC
9	5700022	57	OTHRW	7/10/1979	NA	COLUMBIA NATURAL RESOURCES, LLC
10	5700085	57	OTHRW	2/2/1984	NA	PRIOR, FERRELL L
11	5700011	57	OTHRW	2/1/1976	NA	OPERATOR UNKNOWN
12	5700011	57	PLUG	2/15/1976	NA	OPERATOR UNKNOWN

HPU

OBJECTID	office	PERMIT	RESP_PARTY	type
1	HPU	WV1025511	FAIRFAX MATERIALS, INC.	HPUQ
2	HPU	WV1025511	FAIRFAX MATERIALS, INC.	HPUQ
3	HPU	WV1025511	FAIRFAX MATERIALS, INC.	HPUQ
4	HPU	WV1025511	FAIRFAX MATERIALS, INC.	HPUQ
5	HPU	WVG022500	FAIRFAX MATERIALS, INC.	HPUG2
6	HPU	WVG022500	FAIRFAX MATERIALS, INC.	HPUG2
7	HPU	WVG022509	FAIRFAX MATERIALS, INC.	HPUG2

LEAKING UNDERGROUND STORAGE TANKS SITES

OBJECTID	WVID__	Leak__	Facility_Name	Address	City	State
1	2903805	14-054	MINERAL CO HQ 05291	RT NO 50 W BOX 72-A,	NEW CREEK	WV
2	2909256	13-073	MARTINS FOOD # 6071	100 KEYSER MALL,	KEYSER	WV

OFFICE OF WATER RESOURCES NPDES

permit_id	fac_name	issuedate	expiredate	sub_desc
WVG414751	Hayward Lee Wilson Jr.	5/10/2012	5/31/2014	Home Aeration Unit General
WVG414957	Jason Hale	4/12/2013	5/31/2014	Home Aeration Unit General
WVR107220	Bayridge Greene	10/24/2014	1/3/2018	Storm Water Construction (GP)
WVG980144	New Creek HQ	2/19/2009	10/10/2016	WV DOH+MUN
WVG980145	Skyline Substation	2/19/2009	10/10/2016	WV DOH+MUN
WVR104804	New Creek Mountain Project	8/11/2010	1/3/2018	Storm Water Construction (GP)
WVR105796	Keyser Primary School Site Prep Package	11/10/2011	1/3/2018	Storm Water Construction (GP)
WVR107008	Potomac State College - Stayman Soccer Field	4/18/2014	1/3/2018	Storm Water Construction (NOI)
WVG414770	Roy William Kyle Jr.	5/15/2012	5/31/2014	Home Aeration Unit General
WVG611384	Kessel Lumber Products Inc	10/8/2008	3/31/2014	Storm Water Industrial (GP)
WVR102252	Quail Valley Estates Subdivision	5/16/2006	12/4/2012	Storm Water Construction (GP)
WVR103901	CDB LLC Rt 220 south lot	7/17/2008	12/4/2012	Storm Water Construction (NOI)
WVR105906	STONEY RUN BAR SITE	1/27/2012	1/3/2018	Storm Water Construction (NOI)
WVR103190	New Creek Highlands Subdivision, Section 3	10/3/2007	12/4/2012	Storm Water Construction (GP)
WVR106734	Water Treatment & Distribution System Improvements	9/3/2013	1/3/2018	Storm Water Construction (GP)
WVG610123	Keyser Ready Mix Concrete and Vehicle Maintenance Shop	9/9/1993	3/31/2014	Storm Water Industrial (GP)
WVG610190	SISLER LUMBER CO	11/10/1993	3/31/2014	Storm Water Industrial (GP)
WVSG20011	M & W Septic Tank Pumping	5/27/1998	9/23/2015	Sludge/Septic POTW Disposal (GP)

OFFICE OF WATER RESOURCES NPDES OUTLETS

OBJECTID	permit_id	fac_name	issuedate	expiredate	sub_desc
1	WVG414751	Hayward Lee Wilson Jr.	5/10/2012	5/31/2014	Home Aeration Unit General
2	WVG414957	Jason Hale	4/12/2013	5/31/2014	Home Aeration Unit General
3	WVG980144	New Creek HQ	2/19/2009	10/10/2016	WV DOH+MUN
4	WVG980145	Skyline Substation	2/19/2009	10/10/2016	WV DOH+MUN
5	WVR105796	Keyser Primary School Site Prep Package	11/10/2011	1/3/2018	Storm Water Construction (GP)
6	WVG414770	Roy William Kyle Jr.	5/15/2012	5/31/2014	Home Aeration Unit General
7	WVG611384	Kessel Lumber Products Inc	10/8/2008	3/31/2014	Storm Water Industrial (GP)
8	WVG610123	Keyser Ready Mix Concrete and Vehicle Maintenance Shop	9/9/1993	3/31/2014	Storm Water Industrial (GP)
9	WVG610159	GRANT COUNTY MULCH INC/Grant Co. Site	10/12/1993	3/31/2014	Storm Water Industrial (GP)
10	WVG610190	SISLER LUMBER CO	11/10/1993	3/31/2014	Storm Water Industrial (GP)

SUPERFUND RESOURCE CONSERVATION & RECOVERY ACT FACILITIES

OBJECTID_1	PRIMARY_NA	LOCATION_A	SUPPLEMENT	CITY_NAME
1	GEORGE'S TUNE-UP	90 CARSKADON LANE		KEYSER
2	LUSK AUTOMOTIVE	567 MINERAL STREET		KEYSER
3	DIUBALDO TRUCKING CO	626 CARSKADON RD		KEYSER
4	MINERAL COUNTY VO TECH CENTER	600 HARLEY O STAGGERS DR		KEYSER
5	FASTWAY AUTO	30 NORTH MINERAL ST		KEYSER
6	GULF EXPRESS	2 MINERAL ST		KEYSER
7	SMITH AUTO REPAIR	118 MOZZEL ST		KEYSER
8	STARR AUTOMOTIVE	31 HESKETT ST		KEYSER
9	ROBS BODY AUTO REPAIR SHOP	250 ARMSTRONG ST		KEYSER
10	THE OIL WORKS	474 S MINERAL ST		KEYSER
11	SPENCER, J R TRUCKING	RT 2 BOX 254 A		KEYSER
12	JENKINS CHRYSLER KEYSER INC	NEW CREEK DR RT 4 BOX 33 A		KEYSER
13	MOHAWK ENTERPRISES INC SUN OIL CO PENN	ROUTE 220 RD 2		KEYSER
14	KESSEL LUMBER SUPPLY, INC.	NEW CREEK DRIVE		KEYSER
15	PENN VENTILATOR CO INC	NORTH MAIN ST		KEYSER
16	FAIRFAX SAND & CRUSHED STONE	WAXLER RD		SHORT GAP
17	PERINI CORP CONT DACW3177C0015	RT 146		KEYSER
18	J & J CHEVROLET GEO OLDS INC	1 MI S OF KEYSER ON RT 220		KEYSER
19	MINERAL FABRICATION & MACHINE	KEYSER INDUSTRIAL PARK		KEYSER
20	GENERAL DELIVERY	WAXLER RD		KEYSER
21	RINKERS AUTO RPR	VALLEY VIEW RD		KEYSER
22	MARKWOOD FORD & MERCURY INC	ROUTE 220 SOUTH		KEYSER
23	SIMPSON AUTO SUPPLY INC	RTE 220 SOUTH MINERAL ST		KEYSER
24	BURGESS FARM SERVICE, INC.	201 PATRICK STREET		KEYSER
25	NEW CREEK INVESTMENTS	76 JAMES ST		KEYSER
26	MINERAL CTY SCHOOL DISTRICT	1 BAKER PLACE		KEYSER
27	SISLER LUMBER CO	2.7 MILES SO. OF KEYSER		KEYSER
28	B&B CONCRETE INC	RT 4 BOX 26		KEYSER
29	7-ELEVEN #17109	100 BAKER ST		KEYSER
30		MAINTENANCE BLDG POTOMAC STATE COLLEGE		KEYSER
31	KEYSER HIGH SCHOOL	1 E PIEDMONT ST		KEYSER
32	KEYSER PRIMARY/MIDDLE SCHOOL	700 HARLEY STAGGERS DRIVE		KEYSER
33	KEYSER HEADSTART CENTER	251 WEST PIEDMONT STREET		KEYSER
34	MAINTENANCE SHOP	101 FORT AVE.		KEYSER
35	SHEETZ STORE #168	438 S MINERAL ST		KEYSER
36	HARDY HARDWOOD LLC	RT 972 &50		NEW CREEK
37	MILLER FIELD	UNKNOWN		KEYSER
38	SHEETZ STORE #168	1280 NEW CREEK HIGHWAY		KEYSER
39	REEDS DRUG STORE	US ROUTE 220 AND PIN OAK LANE		KEYSER
40	CVS PHARMACY #1427	45 S MINERAL ST		KEYSER
41	AES NEW CREEK MOUNTAIN PROJECT	UNKNOWN		ELK GARDEN
42	STONEY RUN BAR SITE	STONEY RUN ROAD		KEYSER
43	NEW CREEK SITE 14 STAGING AREA	CO RT 42/2		SCHERR
44	CDB LLC RT 220 SOUTH LOT	RT 220 SOUTH OF KEYSER WV		KEYSER
45	QUAIL VALLEY ESTATES SUBDIVISI	UNKNOWN		KEYSER
46	PINNACLE WIND, LLC., OPERATION	RT. 4 GREEN MOUNTAIN RD.		KEYSER
47	KEYSER PRIMARY SCHOOL SITE PRE	US RT 220		KEYSER
48	POTOMAC LUMBER CO INC	HC 72 BOX 117		NEW CREEK
49	NEW CR HEIGHTS MOBILE HOME COM	UNKNOWN		KEYSER
50	WATER LINE EXTENSION	US RT 50/ WV RT 93		NEW CREEK
51	GRAYSON GAP BOX CULVERT	UNKNOWN		NEW CREEK
52	NEW CREEK HEIGHTS MOBILE HOME	US RT 220		KEYSER
53	POTOMAC VALLEY HOSPITAL	UNKNOWN		KEYSER
54	TIF DEVELOPMENT, DISTRICT NO.	PRIVATE ROAD (PIN OAK LANE)		KEYSER
55	POTOMAC STATE COLLEGE OF WEST	US RT 220		KEYSER
56	SHEETZ, INC.- STORE #168	UNKNOWN		KEYSER
57	MINERAL CO.COM.OFC OF EMERGENC	UNKNOWN		KEYSER
58	ARMSTRONG STREET BRIDGE	UNKNOWN		KEYSER
59	BB&T BRANCH BANK, KEYSER	US RT 220		KEYSER
60	MCGUINNESS/PAUGH PROPERTY	US ROUTE 50		NEW CREEK
61	ABEL ENTERPRISES, LLC	US RT 220		KEYSER
62	KEYSER MCCOOLE BRIDGE (WVDOH	UNKNOWN		CLAYSVILLE
63	KEYSER-MCCOOLE BRIDGE	US 220		KEYSER
64	D & W TRUCK LINES	STATE ROAD 93 WEST		SCHERR

APPENDIX B. EARLY WARNING MONITORING SYSTEM FORMS

Select and Attach the Appropriate Form for Your System

Form A - Complete if you currently have an early warning monitoring system for a groundwater source.

Form B - Complete if you currently have an early warning monitoring system installed for a surface water source.

Form C - If you do not currently have an early warning monitoring system installed for a surface water intake or are planning to upgrade or replace your current system, complete this form.

Form D - If you do not currently have an early warning monitoring system installed for a groundwater source or are planning to upgrade or replace your current system, complete this form.

Note: You may need to fill out and attach more than one form to your Protection Plan, depending on your current situation.

Appendix B - Form B
Proposed Ground Monitoring Worksheet

Describe the type of early warning detection equipment that could be installed, including design:
Multi-parameter Universal Controller with the capability of monitoring several different parameters. The controller is mounted on a panel that also serves as a trough. A separate pump is necessary to pump the raw water to and through the trough. The trough is capable of receiving up to 6 different probe sensors that can monitor parameters such as: Oil and gas, pH, temperature, conductivity, DO, turbidity, nitrates, ammonium, or organics. The controller would be programmed to alarm the operators through the existing telemetry when any of the monitored parameters got above a certain point.
Where would the equipment be located?:
The equipment would be mounted, out of the weather, at the control panel for the above the raw water intake at New Creek.
What would the maintenance plan for the monitoring equipment entail?:
Daily checkup of the monitoring equipment. The probe/sensors can be unscrewed from the trough and wiped down as needed. The trough can also be wiped out or flushed as needed.
Describe the proposed sampling plan at the monitoring site:
Water would be drawn directly from New Creek to the panel/trough with a single tap for a drain line. The controller would be continuously monitoring the water through the trough based on the probes mentioned above. If a parameter would go beyond the acceptable limits, the telemetry would alarm the Operators who in turn could shut down the intake before any contaminated water could reach the plant.
Describe the proposed procedures for data management and analysis:
The data gathered during the continuous monitoring could be added to the existing telemetry (SCADA) system. The telemetry would time stamp the information received and create a trending line graph for each parameter. The graph would be based on the time of sample and level. This would allow the District to see a base line and any changes that occur on a daily basis.

APPENDIX C. COMMUNICATION PLAN TEMPLATE

Keyser City Of

PWSID: WV3302915

Authorizing Signature: Buck Eagle

Contact Phone Number: (304)813-5550

Contact Email Address: waterplant@cityofkeyser.com

Plan Developed On: July 2021

ACKNOWLEDGMENTS:

This plan was developed by [insert name, title of person completing plan, and who they work for] to meet certain requirements of the Source Water and Assessment Protection Program (SWAPP) and the Wellhead Protection Program (WHPP) for the State of West Virginia, as directed by the federal Safe Drinking Water Act (SDWA) and state laws and regulations.

INTRODUCTION

Legislative Rule 64CSR3 requires public water systems to develop a Communication Plan that documents how public water suppliers, working in concert with state and local emergency response agencies, shall notify state and local health agencies and the public in the event of a spill or contamination event that poses a potential threat to public health and safety. The plan must indicate how the public water supplier will provide updated information, with an initial notification to the public to occur no later than thirty minutes after the supplier becomes aware that the spill, release or potential contamination of the public water system poses a potential threat to public health and safety.

The public water system has responsibility to communicate to the public, as well as to state and local health agencies. This plan is intended to comply with the requirements of Legislative Rule 64CSR3, and other state and federal regulations.

TIERS REPORTING SYSTEM

This water system has elected to use the Tiered Incident / Event Reporting System (TIERS) for communicating with the public, agencies, the media, and other entities in the event of a spill or other incident that may threaten water quality. TIERS provides a multi-level notification framework, which escalates the communicated threat level commensurate with the drinking water system risks associated with a particular contamination incident or event. TIERS also includes a procedural flow chart illustrating key incident response communication functions and how they interface with overall event response / incident management actions. Finally, TIERS identifies the roles and responsibilities for key people involved in risk response, public notification, news media and other communication.

TIERS provides an easy-to-remember five-tiered **A-B-C-D-E** risk-based incident response communication format, as described below. Table 1 provides also associated risk levels.

A = Announcement. The water system is issuing an announcement to the public and public agencies about an incident or event that may pose a threat to water quality. Additional information will be provided as it becomes available. As always, if water system customers notice anything unusual about their water, they should contact the water system.

B = Boil Water Advisory. A boil water advisory has been issued by the water system. Customers may use the water for showering, bathing, and other non-potable uses, but should boil water used for drinking or cooking.

C = Cannot Drink. The water system asks that users not drink or cook with the water at this time. Non-potable uses, such as showering, bathing, cleaning, and outdoor uses are not affected.

D = Do Not Use. An incident or event has occurred affecting nearly all uses of the water. Do not use the water for drinking, cooking, showering, bathing, cleaning, or other tasks where water can come in contact with your skin. Water can be used for flushing commodes and fire protection.

E = Emergency. Water cannot be used for any reason.

Tier	Tier Category	Risk Level	Tier Summary
A	Announcement	Low	The water system is issuing an announcement to the public and public agencies about an incident or event that could pose a threat to public health and safety. Additional information will be provided as it becomes available.
B	Boil Water Advisory	Moderate	Water system users are advised to boil any water to be used for drinking or cooking, due to possible microbial contamination. The system operator will notify users when the boil water advisory is lifted.
C	Cannot Drink	High	System users should not drink or cook with the water until further notice. The water can still be used for showering, bathing, cleaning, and other tasks.
D	Do Not Use	Very High	The water should only be used for flushing commodes and fire protection until further notice. More information on this notice will be provided as soon as it is available.
E	Emergency	Extremely High	The water should not be used for any purpose until further notice. More information on this notice will be provided as soon as it is available.

COMMUNICATION TEAM

The Communication Team for the water system is listed in the table below, along with key roles. In the event of a spill or other incident that may affect water quality, the water system spokesperson will provide initial information, until the team assembles (if necessary) to provide follow-up communication

Water system communication team members, organizations, and roles.

Team Member Name	Organization	Phone	Email
Buck Eagle	Keyser City Of	(304)813-5550	waterplant@cityofkeyser.com
Patrick Halterman	Keyser City Of	(304)788-3193	waterplant@cityofkeyser.com

In the event of a spill, release, or other incident that may threaten water quality, members of the team who are available will coordinate with the management staff of the local water supplier to:

- Collect information needed to investigate, analyze, and characterize the incident/event
- Provide information to the management staff, so they can decide how to respond
- Assist the management staff in handling event response and communication duties
- Coordinate fully and seamlessly with the management staff to ensure response effectiveness

COMMUNICATION TEAM DUTIES

The communication team will be responsible for working cooperatively with the management staff and state and local emergency response agencies to notify local health agencies and the public of the initial spill or contamination event. The team will also provide updated information related to any contamination or impairment of the source water supply or the system's drinking water supply.

According to Legislative Rule 64CSR3, the initial notification to the public will occur no later than thirty minutes after the public water system becomes aware that the spill, release or potential contamination of the public water system poses a potential threat to public health and safety.

As part of the group implementing the Source Water Protection Plan, team members are expected to be familiar with the plan, including incident/event response and communication tasks. Specifically, team members should:

- Be knowledgeable on elements of the Source Water Protection Plan and Communication Plan
- Attend team meetings to ensure up-to-date knowledge of the system and its functions
- Participate in periodic exercises that "game out" incident response and communication tasks
- Help to educate local officials, the media, and others on source water protection
- Cooperate with water supplier efforts to coordinate incident response communication
- Be prepared to respond to requests for field investigations of reported incidents
- Not speak on behalf of the water supplier unless designated as the system's spokesperson

The primary spokesperson will be responsible for speaking on behalf of the water system to local agencies, the public, and the news media. The spokesperson should work with the management staff and the team to ensure that all communication is clear, accurate, timely, and consistent. The spokesperson may authorize and/or direct others to issue news releases or other information that has been approved by the system's management staff. The spokesperson is expected to be on call immediately when an incident or event which may threaten water quality occurs. The spokesperson will perform the following tasks in the event of a spill, release, or other event that threatens water quality:

- Announce which risk level (A, B, C, D, or E) will apply to the public notifications that are issued
- Issue news releases, updates, and other information regarding the incident/event
- Use the news media, email, social media, and other appropriate information venues
- Ensure that news releases are sent to local health agencies and the public
- Respond to questions from the news media and others regarding the incident/event
- Appear at news conferences and interviews to explain incident response, etc.

INCIDENT / EVENT COMMUNICATION PROCEDURE

The flow chart in this section illustrates how the water system will respond when it receives a report that a spill, release, or other contamination event may have occurred. Key elements of the flow chart are described below.

Communication with agencies, the public, and the media during threat incidents

Upon initial notification of the incident/event, system managers and staff will collect information and verify the need for further investigation. Only properly trained personnel will perform onsite investigations if permitted by emergency responders. If further investigation is warranted, and the initial facts support it, the water system spokesperson will issue a public communication statement consistent with the threat level. In addition, water system personnel and partners will be dispatched to conduct reconnaissance, a threat assessment, and a threat characterization, if present. This work may include:

- Verification of the incident/event type (spill, release, etc.)
- Location of incident/event
- Type of material(s) involved in spill, release, etc.
- Quantity of material involved
- Potential of the material to move, migrate, or be transported
- Relevant time factor(s) in the risk assessment (e.g., downstream movement rate)
- Overall level of risk to water system, whether low, moderate, high, or very high
- Development of the initial risk characterization

As the flow chart indicates, several iterative cycles will occur after the initial threat assessment, including communication with local agencies and the public, further investigation of the incident, possible implementation of

the water system's contingency plan, and eventual elimination of the threat and a return to normal operations. Communication activities during this period will include:

- The initial release (i.e., Announcement, Boil Water Advisory, Cannot Drink, Do Not Use, or Emergency)
  - Sent to local health agencies, the public, and the news media within 30 minutes
- Notification of the local water system's source water protection and communication teams
  - If warranted by initial findings regarding the spill, release, or incident
- Notification of the WV Bureau of Public Health
  - As required
- Periodic information updates, as incident response information is received
- Updates to the applicable A-B-C-D-E advisory tier, as necessary

If time permits and the need arises, after the threat level is reduced, and operations return to normal, the water system staff, the communication and source water protection teams, and their partners may conduct a post-event review and assessment. The purpose of the review is to examine the response to the incident, relevant communication activities, and overall outcomes. Plans and procedures may be updated, altered, or adapted based on lessons learned through this process.

EMERGENCY SHORT FORMS

Emergency Communication Information

	Name	Phone	Email
Designated spokesperson:	Buck Eagle	(304)813-5550	waterplant@cityofkeyser.com
Alternate spokesperson:	Patrick Halterman	(304)788-3193	waterplant@cityofkeyser.com
Designated location to disseminate information to media:	City Hall 111 N. Davis Street Keyser, WV 26726		
Method of Contact:	newspaper social media radio		

Media Contacts:	Name	Title	Phone Number	Email
	Mineral Daily News Tribune		(304)788-3333	

Emergency Service Contacts

	Name	Emergency Phone	Alternative Phone	Email
Police	City of Keyser	(911)___-____	(304)788-1311	
Fire	Keyser VFD	(911)___-____	(304)788-1542	
Ambulance	Keyser VFD	(911)___-____	(304)788-1542	
Hazmat	Keyser VFD	(911)___-____	(304)788-1542	
Other				
Other				
Other				

Sensitive Populations

Other Communities that are served by the Utility:	New Creek Water Association, McCole Maryland			
Major User/Sensitive Population Notification	Name	Emergency Phone	Alternative Phone	Email
	NC – Johnny Stewart	(304)813-7503		
	MC – Mark Yoder	(301)777-5933		
	Potomac State School System	(304)788-6931	(304)788-4200	
	Potomac Valley Hospital	(304)597-3500		
	Piney Valley Nursing Home	(304)788-3415		
	Little People Daycare	(304)788-5317		
	Catamount Daycare	(304)788-1880		
EED District Office Contact	Name	Phone	Email	
	Alan Marchun	(304)725-9453	alan.f.marchun@wv.gov	
OEHS Readiness Coordinator	Lee Orr	(304)356-4290		

Downstream Water System Contacts	Water System Name	Contact Name	Emergency Phone	Alternate Phone	Email
	Cumberland MD	Rodney Marvin	(814)767-9552		

Are you planning on implementing the TIER Communications plan?:	Yes

Emergency Service Key Staff Members

	Name	Title	Phone	Email
Key Staff Responsible for Coordinating Emergency Response Rrocedures:		Buck Eagle	City Administrator	(304)813-5550
	Patrick Halterman	Chief Water Operator	(304)788-3913	waterplant@cityofkeyser.com
Staff Responsible for Keeping Confidential PSSC Information and Releasing to Emergency Responders.		Buck Eagle	City Administrator	(304)813-5550
	Patrick Halterman	Chief Water Operator	(304)788-3913	waterplant@cityofkeyser.com

Emergency Response Information

List Laboratories available to perform sample analysis in case of emergency.	Name	Phone
	N/A	
Has utility developed a detailed Emergency Response Plan in accordance with the Public Health Security Bioterrorism preparedness and Response Plan Act of 2002 that covers the following areas?:		Yes
When was the emergency response plan developed or last updated?:		2016

EMERGENCY CONTACT INFORMATION

State Emergency Spill Notification

1-800-642-3074

Office of Emergency Services

http://www.wvdhsem.gov/

Charleston, WV- (304) 558-5380

WV Bureau for Public Health Office of Environmental Health Services (OEHS)

www.wvdhhr.org/oehs

Readiness Coordinator - Lee Orr

Phone: 304-356-4290

Cell: 304-550-5607

E-mail: Lee.E.Orr@wv.gov

Environmental Engineering Division Staff

Charleston, Central Office (304) 558-2981

Beckley, District 1 (304) 256-6666

St. Albans, District 2 (304) 722-0611

Kearneysville, District 4 (304) 725-9453

Wheeling, District 5 (304) 238-1145

Fairmont, District 6 (304) 368-2530

National Response Center - Chemical, Oil, & Chemical/Biological Terrorism

1-800-424-8802

WV State Fire Marshal's Office

1-800-233-3473

West Virginia State Police

1-304-746-2100

WV Watch – Report Suspicious Activity

1-866-989-2824

DEP Distance Calculator

http://tagis.dep.wv.gov/pswicheck/

PRESS RELEASE ATTACHMENTS

TIERS Levels A, B, C, D, and E

UTILITY ISSUED NOTICE – LEVEL A

PUBLIC WATER SYSTEM ANNOUNCEMENT

A WATER SYSTEM INVESTIGATION IS UNDERWAY

On _____ at ___:____ AM/PM, the _____ Water System began investigating an incident that may affect local water quality.

The incident involves the following situation at this location:

_____

_____

_____

There are no restrictions on water use at this time. As always, if water system customers notice anything unusual about their water – such as abnormal odors, colors, sheen, etc. – they should contact the water system at _____.

At this time there is no need for concern if you have consumed or used the water.

Regular updates will be provided about this Announcement as water system staff continue their investigation. Again, there are no restrictions on water use at this time.

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL B

BOIL WATER ADVISORY

A BOIL WATER ADVISORY IS IN EFFECT

On _____ at ___:____ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, bathing, and food preparation until further notice. Boiling kills bacteria and other organisms in the water.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when you no longer need to boil your water. We anticipate resolving the problem within _____ hours/days. For more information, please contact _____ at _____ or _____ at _____.

General guidelines on ways to lessen the health risk are available from the EPA Safe Drinking Water Hotline at 1 (800) 426-4791.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL C

"CANNOT DRINK" WATER NOTIFICATION

A LEVEL C WATER ADVISORY IS IN EFFECT

On _____ at ___:____ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER.** You can't drink the water, but you can use it for showering, bathing, toilet-flushing, and other non-potable purposes.
- **BOILING WILL NOT PURIFY THE WATER.** Do not drink the water, even if it is boiled.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when the water is safe to drink. We anticipate resolving the problem within _____ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact _____ at _____ or _____ at _____.

General guidelines on ways to lessen the health risk are available from the EPA Safe Drinking Water Hotline at 1 (800) 426-4791.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL D

"DO NOT USE" WATER NOTIFICATION

A LEVEL D WATER ADVISORY IS IN EFFECT

On _____ at ___:____ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER.** The water is contaminated.
- **DO NOT SHOWER OR BATHE IN THE WATER.** You can't use the water for drinking, showering, or bathing. It can be used for toilet flushing and firefighting.
- **BOILING WILL NOT PURIFY THE WATER.** Do not use the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when the water is safe to drink. We anticipate resolving the problem within _____ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact _____ at _____ or _____ at _____.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL E

EMERGENCY WATER NOTIFICATION

A LEVEL E WATER ADVISORY IS IN EFFECT

On _____ at ___:____ am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER.** The water is contaminated.
- **DO NOT USE THE WATER FOR ANY PURPOSE!** You can't use the water for drinking, showering, or bathing, or any other use – not even for toilet flushing.
- **BOILING WILL NOT PURIFY THE WATER.** Do not use the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when the water is safe to drink. We anticipate resolving the problem within _____ hours/days. For more information – or to report unusual water conditions such as abnormal odors, olors, sheen, etc. – please contact _____ at _____ or _____ at _____.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

APPENDIX D. SINGLE SOURCE FEASIBILITY

Water Source Alternative:

Back up intake	
Name of Alternative:	Potomac River
Brief Description of the Alternative:	Potomac River
Feasible?:	Yes
Provide Cost Estimate:	$0
Would this alternative supply 100% of your needs?:	No
Economic Criteria - Operation and Maintenance Costs:	2
Economic Criteria - Capital Cost:	2
Technical Criteria - Permitting:	3
Technical Criteria - Flexibility:	3
Technical Criteria - Resilience:	3
Technical Criteria - Institutional Requirements:	3
Environmental Criteria - Environmental Impacts:	3
Environmental Criteria - Aesthetic Impacts:	3
Environmental Criteria - Stakeholder Issues:	0
Final Score:	77.33%
Interconnection	
Name of Alternative:	City of Piedmont
Brief Description of the Alternative:	City of Piedmont
Feasible?:	Yes
Provide Cost Estimate:	$0
Would this alternative supply 100% of your needs?:	No
Economic Criteria - Operation and Maintenance Costs:	1
Economic Criteria - Capital Cost:	1
Technical Criteria - Permitting:	0
Technical Criteria - Flexibility:	0
Technical Criteria - Resilience:	0
Technical Criteria - Institutional Requirements:	3
Environmental Criteria - Environmental Impacts:	0
Environmental Criteria - Aesthetic Impacts:	0
Environmental Criteria - Stakeholder Issues:	0
Final Score:	22.67%
Treated water storage	
Name of Alternative:	Treated water storage

Brief Description of the Alternative:	Treated water storage
Feasible?:	Yes
Provide Cost Estimate:	$0
Would this alternative supply 100% of your needs?:	No
Economic Criteria - Operation and Maintenance Costs:	3
Economic Criteria - Capital Cost:	1
Technical Criteria - Permitting:	3
Technical Criteria - Flexibility:	3
Technical Criteria - Resilience:	0
Technical Criteria - Institutional Requirements:	0
Environmental Criteria - Environmental Impacts:	0
Environmental Criteria - Aesthetic Impacts:	0
Environmental Criteria - Stakeholder Issues:	0
Final Score:	48.67%
Tank for Raw Water Storage	
Name of Alternative:	Raw Water Storage
Brief Description of the Alternative:	Raw Water Storage
Feasible?:	Yes
Provide Cost Estimate:	$0
Would this alternative supply 100% of your needs?:	No
Economic Criteria - Operation and Maintenance Costs:	2
Economic Criteria - Capital Cost:	1
Technical Criteria - Permitting:	3
Technical Criteria - Flexibility:	3
Technical Criteria - Resilience:	3
Technical Criteria - Institutional Requirements:	3
Environmental Criteria - Environmental Impacts:	0
Environmental Criteria - Aesthetic Impacts:	0
Environmental Criteria - Stakeholder Issues:	0
Final Score:	63.00%
Other	
Name of Alternative:	Dam #1
Brief Description of the Alternative:	Dam #1
Feasible?:	Yes
Provide Cost Estimate:	$0
Would this alternative supply 100% of your needs?:	No
Economic Criteria - Operation and Maintenance Costs:	2

Economic Criteria - Capital Cost:	2
Technical Criteria - Permitting:	3
Technical Criteria - Flexibility:	2
Technical Criteria - Resilience:	3
Technical Criteria - Institutional Requirements:	3
Environmental Criteria - Environmental Impacts:	0
Environmental Criteria - Aesthetic Impacts:	0
Environmental Criteria - Stakeholder Issues:	0
Final Score:	58.33%

Feasibility Study Narrative

Single Source Feasibility Study

If a public water utility's water supply plant is served by a single–source intake to a surface water source of supply or a surface water influenced source of supply, the submitted source water protection plan must also include an examination and analysis of the technical and economic feasibility of alternative sources of water to provide continued safe and reliable public water service in the event that its primary source of supply is detrimentally affected by contamination, release, spill event or other reason. These alternatives may include a secondary intake, two days of additional raw or treated water storage, an interconnection with neighboring systems, or other options identified on a local level. Note: a suitable secondary intake would draw water supplies from a substantially different location or water source.

To accomplish this requirement, utilities should examine all existing or possible alternatives and rank them by their technical, economic, and environmental feasibility. To have a consistent and complete method for ranking alternatives, WVBPH has developed a feasibility study guide. This guide provides several criteria to consider for each category, organized in a Feasibility Study Matrix. By completing the Feasibility Study Matrix, utilities will demonstrate the process used to examine the feasibility of each alternative and document scores that compare the alternatives. The Feasibility Study matrix and summary of the results are presented in an alternatives feasibility study attached as **Appendix D**.

Communication Plan

City of Keyser has also developed a Communication Plan that documents the manner in which the public water utility, working in concert with state and local emergency response agencies, shall notify the local health agencies and the public of the initial spill or contamination event and provide updated information related to any contamination or impairment of the source water supply or the system's drinking water supply. The initial notification to the public will occur in any event no later than thirty minutes after the public water system becomes aware of the spill, release, or potential contamination of the public water system. A copy of the source water protection plan and the Communication Plan has been provided to the local fire department. City of Keyser will update the Communication Plan as needed to ensure contact information is up to date.

Procedures should be in place for the kinds of catastrophic spills that can reasonably be predicted at the source location or within the SWPA. The chain-of-command, notification procedures and response actions should be known by all water system employees.

The WVBPH has developed a recommended communication plan template that provides a tiered incident communication process to provide a universal system of alert levels to utilities and water system managers. The comprehensive Communication Plan for City of Keyser is attached as **Appendix C** for internal review and planning purposes only.

The West Virginia Department of Environmental Protection is capable of providing expertise and assistance related to prevention, containment, and clean-up of chemical spills. The West Virginia Department of Environmental Protection Emergency Response 24-hour Phone is 1-800-642-3074. The West Virginia Department of Environmental Protection also operates an upstream distance estimator that can be used to determine the distance from a spill site to the closest public water supply surface water intake.

Appendix E. Feasibility Study Narrative

Backup (Secondary Intake) - The City of Keyser currently has one intake structure located along New Creek adjacent to the Water Treatment Plant (WTP). Under draught conditions several years ago, the City was able to run a temporary line in the stream bed of New Creek out to the North Branch of the Potomac River and pump/draw raw water from there to operate the WTP.

Operation and Maintenance for a new backup intake involves the energy cost, pump renewal and replacement, and line maintenance. The approximate distance from the WTP to the North Branch of the Potomac is 6,650 feet. Over 70% of this distance would either be located under hard surface (asphalt) road or in the banks of New Creek making capitol costs high.

Permitting for a backup include Health Permit, Stormwater Permit, Public Lands, USCOE Stream Activity Permit, DOH Occupation, and Railroad Crossing Permit. All of these permits should be attainable without any major requirements.

Interconnection - The City of Keyser provides water to the City along with the New Creek Water Association and Allegany County, McCoole, MD Water System. There is no viable option for interconnection that would provide the necessary water demand for the City of Keyser. The City of Piedmont is the next closest utility, and they currently have a WTP with a capacity of 1 MGD which is what City of Keyser has on an average daily demand. All cost estimates reflect what would be needed to complete the interconnection, but not supply the total water needed at Keyser.

Treated Water Storage – The City of Keyser is bringing a fifth treated water storage tank on line. It is the Chestnut Tank (350,000 gallons). This tank brings their total treated water storage capacity to 2.474 Million Gallons. This equates to approximately 2.65 days of storage based on average production (934,594 gpd) and 1.91 days peak (1,294,291 gpd). Peak production for the plant was 1,727,840 gallons per day. This number was an anomaly with several other days just over 1 million gallons produced, resulting in a peak of 1.294 Million. This number was used for storage capacity. The additional capacity needed to surpass the 2 days storage at peak usage is 115,580 gallons. The Potomac State Storage Tank (1.0 Million Gallons) built in 1981 is the tank that the City would like to see upgraded. It is a 45' diameter x 85' tall welded storage tank. Replacing this tank with a new 50' diameter tank would increase the storage capacity to 1.176 Million Gallons, and exceed the two (2) day storage.

Raw Water Storage – The City of Keyser currently has a raw water capacity of 285,000 gallons in the settling basins. A Raw Water Tank at the WTP would provide extended operation in the event of any contamination to the intake source. The tank could be installed at the WTP and would require a booster station to pump water from the gravity intake into the tank. The cost estimate for this report was based on a 1.0 Million Gallon Tank (approximately 1 average day production) and booster station.

Other – Dam #1 – Dam #1 is reviewed as an alternate water source for the City of Keyser. This would include an intake structure and piping from the Dam to the WTP. Elevations show that the Dam would be able to gravity feed to the WTP clearwell (similar to the existing intake in New Creek). However, the layout of the transmission line from the Dam to the WTP is very difficult. It would need to navigate through the neighborhood north of Route 220. Therefore, the capitol cost for line installation reflects this tough installation.

Matrix Document

Feasibility Matrix | **City of Keyser** | **PWSID: 3302915** | **Jan-16** | **Matrix Completed By:** | **Cerrone Associates, Inc.**

Criteria	Question	Backup Intake	Feasibility	Interconnect	Feasibility	Treated Water Storage	Feasibility	Raw Water Storage	Feasibility	Dam Site #1	Feasibility
	Economic Criteria										
What is the total current budget year cost to operate and maintain the PWSU [current budget year]?		$852,340.00		$852,340.00		$852,340.00		$852,340.00		$852,340.00	
O and M Costs	Describe the major O&M cost requirements for the alternative?	O&M for a backup / alternate Intake includes the intake structure, pumps, line and appurtenances.	2	There is not a viable option for interconnection. Appendix E has information.	0	No additional O & M expected. Just Renewal and Replacement of upgraded tank	3	O & M for Booster station and raw water tank	3	Additional Line from site to WTP	1
	What is the incremental cost ($/gal) to operate and maintain the alternative?	$23,000.00	2	$19,773.00	2	$14,000.00	3	$18,572.00	2	$1,905.00	2
	Cost comparison of the incremental O&M cost to the current budgeted costs (%)	2.70%	2	2.32%	2	1.64%	3	2.18%	2	0.22%	2
O and M-Feasibility Score			2.0		1.3		3.0		2.3		1.7
Describe the capital improvements required to implement the alternative.		New intake structure, wetwell, pumps, piping, and appurtenances		Capital Costs in Appendix E show estimates for interconnect. Connection not able to meet daily demands.		The City has the storage capacity based on average production and is just under (1.9%) at peak.		Raw Water Storage at the WTP equal to one (1) day average usage.		Intake structure at the Dam along with new line and tie-in at the WTP	
Capital Costs	What is the total capital cost for the alternative?	$1,289,775.00	1	$1,580,616.00	0	$1,740,000.00	1	$1,957,500.00	1	$1,283,250.00	1
	What is the annualized capital cost to implement the alternative, including land and easement costs, convenience tap fees, etc. ($/gal)	$60,917.00	2	$74,653.00	0	$82,181.00	1	$92,454.00	1	$60,609.00	2
	Cost comparison of the alternatives annualized capital cost to the current budgeted costs (%)	7.15%	2	8.76%	2	9.64%	2	10.85%	2	7.11%	2
Capital Cost-Feasibility Score			1.7		0.7		1.3		1.3		1.7
	Technical Criteria										
Permitting	Provide a listing of the expected permits required and the permitting agencies involved in their approval.	Health Permit - WVBPH; NPDES Stormwater - WVDEP; Public Lands - WVDNR; Stream Activity - USACE; Rail Crossing; DOH Occupation -	3	Health Permit - WVBPH; NPDES Stormwater - WVDEP; DOH Occupation - Bond acquisition	3	Health Permit - WVBPH	3	Health Permit - WVBPH	3	Health Permit - WVBPH	3
	What is the timeframe for permit approval for each permit?	Health Permit - [illegible] days; NPDES Stormwater - 6 months; Public Lands - 30 days; Stream Activity - 6 months; Rail Crossing - 6 months;	2	Health Permit - 30 days; NPDES Stormwater - 6 months; DOH Occupation - upon bond acquisition.	2	Health Permit - 30 days	3	Health Permit - 30 days	3	Health Permit - 30 days	3
	Describe the major requirements in obtaining the permits (environmental impact studies, public hearings, etc.)	Detailed Design and Construction drawings.	3	Detailed Design and Construction drawings.	3	Detailed Design and Construction drawings.	3	Detailed Design and Construction drawings	3	Detailed Design and Construction drawings	3
	What is the likelihood of successfully obtaining the permits?	Very likely to obtain all necessary permits	3	Very likely to obtain all necessary permits	3	Very likely to obtain permit	3	Very likely to obtain permit	3	Very likely to obtain permit	3
	Does the implementation of the alternative require regulatory exceptions or variances?	None Expected	3	None Expected	3	None Expected	3	None Expected	3	None Expected	3
Permitting-Feasibility Score			2.8		2.8		3.0		3.0		3.0
Flexibility	Will the alternative be needed on a regular basis or only used intermittently?	Intermittenly	3	Intermittenly	0	Regular Basis	3	Regular Basis	3	Intermittenly	2
	How will implementing the alternative affect the PWSU's current method of treating and delivering potable water including meeting Safe Drinking Water Act regulations? (ex. In the case of storage, will the alternative increase the likelihood of disinfection byproducts?)	There is no expected affects	3	There is no expected affects	0	There is no expected affects.	3	There is no expected affects	3	There is no expected affects	2
Flexibility-Feasibility Score			3.0		0.0		3.0		3.0		2.0
Resilience	Will the alternative provide any advantages or disadvantages to meeting seasonal changes in demand?	No	3	No	0	No	0	No	3	No	3
	How resistant will the alternative be to extreme weather conditions such as drought and flooding?	No Different then existing structure	3	No Issues	0	No Issue	0	No Issue	3	No Issue	3

Criteria	Question	Backup Intake	Feasibility	Interconnect	Feasibility	Treated Water Storage	Feasibility	Raw Water Storage	Feasibility	Dam Site #1	Feasibility
	Will the alternative be expandable to meet the growing needs of the service area?	Size accordingly to meet growth	3	Does not meet current demand.	0	Meets current demand	0	Meets current demand	3	Meets current demand	3
Resilience-Feasibility Score			***3.0***		***0.0***		***0.0***		***3.0***		***3.0***
Institutional Requirements	Identify any agreements or other legal instruments with governmental entities, private institutions or other PWSU required to implement the alternative.	None Expected	3	Purchase agreement with the City of Piedmont	0	None Expected	0	None Expected	3	None Expected	3
	Are any development/planning restrictions in place that can act as a barrier to the implementation of the alternative.	No	3	No	0	No	0	No	3	No	3
	Identify potential land acquisitions and easements requirements.	Line Easements	3	Boester Station site	0	Temporary construction easement at tank site for demo and construction.	0	Potential easement for booster	2	Potential easement for booster	2
Institutional Requirements-Feasibility Score			***3.0***		***0.0***		***0.0***		***2.7***		***2.7***
Environmental Criteria											
Environmental Impacts	Identify any environmentally protected areas or habitats that might be impacted by the alternative	None Expected	3	None Expected	0	None Expected	0	None Expected	0	[Describe]	0
Environmental Impacts-Feasibility Score			***3.0***		***0.0***		***0.0***		***0.0***		***0.0***
Aesthetic Impacts	Identify any visual or noise issues caused by the alternative that may affect local land uses?	None Expected	3	None Expected	0	None Expected	0	None Expected	0	[Describe]	0
	Identify any mitigation measures that will be required to address aesthetic impacts?	None Expected	3	None Expected	0	None Expected	0	None Expected	0	[Describe]	0
Aesthetic Impacts-Feasibility Score			***3.0***		***0.0***		***0.0***		***0.0***		***0.0***
Stakeholder Issues	Identify the potential stakeholders affected by the alternative.	[Describe]	0	[Describe]	0	[Describe]	0	[Describe]	0	[Describe]	0
	Identify the potential issues with stakeholders for and against the alternative.	[Describe]	0	[Describe]	0	[Describe]	0	[Describe]	0	[Describe]	0
	Will stakeholder concerns represent a significant barrier to implementation (or assistance) of the alternative?	[Yes/No]	0	[Yes/No]	0	[Yes/No]	0	[Yes/No]	0	[Yes/No]	0
Stakeholder Issues-Feasibility Score			***0.0***		***0.0***		***0.0***		***0.0***		***0.0***
Comments		Comments		Comments		Comments		Comments		Comments	

Instructions: Using the expanded instructions in the "FEASIBILITY STUDY GUIDANCE DOCUMENT", complete the white and gray input cells. Rank each criteria based on the evidence provided and best professional judgement. Rank the criteria 0-3, assuming 0=not feasible and 3=most feasible. The password to edit fillable cells is "swap".

Scoring:

0 – Not feasible. Criterion cannot be met by this alternative and removes the alternative from further consideration.

1 – Feasible but difficult. Criterion represents a significant barrier to successful implementation but does not eliminate it from consideration.

2 – Feasible. Criterion can be met by the alternative.

3 – Very Feasible. Criterion can be easily met by the alternative

Feasibility Matrix **City of Keyser** **PWSID: 3302915** **Date: 42370** **Completed By: Cerrone Associates, Inc.**

Alternative Strategy Description	Economic Criteria					Technical Criteria							Environmental Criteria						Final Score	Total Capital Cost	Comments
	Operation and Maintenance Costs	Capital Costs	Total	Total %	Weighted Total	Permitting	Flexibility	Resilience	Institutional Requirements	Total	Total %	Weighted Total	Environmental Impacts	Aesthetic Impacts	Stakeholder Issues	Total	Total %	Weighted Total			
Backup Intake	2.0	1.7	3.7	61.1%	24.4%	2.8	3.0	3.0	3.0	11.8	98.3%	39.3%	3.0	3.0	0.0	6.0	66.7%	13.3%	77.1%	##########	Comments
Interconnect	1.3	0.7	2.0	33.3%	13.3%	2.8	0.0	0.0	0.0	2.8	23.3%	9.3%	0.0	0.0	0.0	0.0	0.0%	0.0%	22.7%	##########	Comments
Treated water storage	3.0	1.3	4.3	72.2%	28.9%	3.0	3.0	0.0	0.0	6.0	50.0%	20.0%	0.0	0.0	0.0	0.0	0.0%	0.0%	48.9%	##########	Comments
Raw Water Storage	2.3	1.3	3.7	61.1%	24.4%	3.0	3.0	3.0	2.7	11.7	97.2%	38.9%	0.0	0.0	0.0	0.0	0.0%	0.0%	63.3%	##########	Comments
Dam Site #1	1.7	1.7	3.3	55.6%	22.2%	3.0	2.0	3.0	2.7	10.7	88.9%	35.6%	0.0	0.0	0.0	0.0	0.0%	0.0%	57.8%	##########	Comments

Scoring:

0 – Not feasible. Criterion cannot be met by this alternative and removes the alternative from further consideration.
1 – Feasible but difficult. Criterion represents a significant barrier to successful implementation but does not eliminate it from consideration.
2 – Feasible. Criterion can be met by the alternative.
3 – Very Feasible. Criterion can be easily met by the alternative

APPENDIX E. SUPPORTING DOCUMENTATION