Source Water Protection Plan
Berkeley County Pswd-Potomac River

PWSID: WV3300218

Berkeley County

Public Version

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Prepared By:

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Superintendent of Operations

In cooperation with Berkeley County Pswd-Potomac River

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:

Steve DeRidder

Name of Authorizing Signatory:

Superintendent of Operations

Title of Authorizing Signatory:

8/12/2021

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 Berkeley County Pswd-Potomac River 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, Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River 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

BERKELEY COUNTY PSWD-POTOMAC RIVER 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 BERKELEY COUNTY PSWD-POTOMAC RIVER

Administrative office location:	251 Caperton Blvd, Martinsburg, BERKELEY, WV, 25403		
Is the system a public utility, according to the Public Service Commission rule?	Yes		
Date of Most Recent Source Water Assessment Report:	8/1/2004		
Date of Most Recent Source Water Protection Plan:	7/1/2019		
Population served directly:	27335		
Bulk Water Purchaser Systems:	System Name	PWSID Number	Population
Total Population Served by the Utility:	27335		
Does utility have multiple Source Water Protection Areas(SWPAs)?	Yes		
How many SWPAs does the utility have?	2		

5.0 WATER TREATMENT AND STORAGE

As required, Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River 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. Berkeley County Pswd-Potomac River Water Treatment Information

BCSPWD-Potomac River WTP	
Water treatment processes (in order of occurrence) includes:	FILTRATION, ULTRAFILTRATION, ACTIVATED CARBON, POWDERED, 5.0-LOG REMOVE/INACTIV CRYPTO, COAGULATION, FLOCCULATION, GASEOUS CHLORINATION, POST, PERMANGANATE, RAPID MIX, SEDIMENTATION, ULTRAVIOLET RADIATION
The treatment capacity is approximately (GPD):	6,000,000
Current average production is approximately (GPD):	3,000,000
Maximum gallons of water treated and produced at that plant in one day during the past year was:	4,200,000
Minimum gallons of water treated and produced at that plant in one day during the past year was:	2,300,000
Plant is operated an average of hours a day:	16
Maximum number of hours of operation in one day at that plant during the past year was:	24
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:	8
Total gallons of treated water storage:	5,240,000
Total gallons of raw water storage (GALs):	0

Table 3. Berkeley County Pswd-Potomac River 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)
POTOMAC RIVER	3488631	INTAKE #1	CONFIDENTIAL	IN001	6/16/2008	Permanent	Active

Table 4. Berkeley County Pswd-Potomac River 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)
WELL A	-		6/15/2009	No	412	404	Unknown	Permanent	Active
WELL B	-		6/15/2009	No	535	195	Unknown	Permanent	Active
WELL D	-		6/15/2009	No	400	107	Unknown	Permanent	Active

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	Potomac River
Size of WSDA (Square Miles)	5534
River Watershed Name (8-digit HUC)	Conococheague-Opequon - 02070004
Size of Zone of Critical Concern (Acres)	9398
Size of Zone of Peripheral Concern (Acres) (Include ZCC area)	17770
Do you blend with ground water	Yes
Do you have an intake or well/spring missing from the list?	No
Intake Name	
Method of Delineation for Groundwater Sources	Hydrogeologic Mapping
Area of Wellhead Protection Area (Acres)	4,319
Intake Name	
Method of Delineation for Groundwater Sources	Hydrogeologic Mapping
Area of Wellhead Protection Area (Acres)	4,319
Intake Name	
Method of Delineation for Groundwater Sources	Hydrogeologic Mapping
Area of Wellhead Protection Area (Acres)	4,319

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 Berkeley County Pswd-Potomac River 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.

Berkeley County Pswd-Potomac River 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 Ouellet	Berkeley County Pswd-Potomac River	Executive Director	(304)267-4600	_jouellet@berkeleywater.org
Steve DeRidder	Berkeley County Pswd-Potomac River	Chief Operator	(304)274-5801	sderidder@berkeleywater.org
	Berkeley County Pswd-Potomac River			
	Berkeley County Pswd-Potomac River			
Eddie Gochenour	Berkeley County Pswd-Potomac River	OHSEM Director	(304)264-1345	egochenour@berkeleywv.org
Mike Thompson	Berkeley County Pswd-Potomac River	Planning Department	(304)267-5106	mthompson@berkeleywv.org
Jennifer O'Brien	Eastern Panhandle Regional Planning	Assistant Director	(304)263-1743	jobrien@region9wv.com
Alana Hartman	WV DEP Division of Water and Waste	Environmental	(304)822-7266	alana.c.hartman@wv.gov
Bill Clark	Eastern Panhandle Regional Planning	Director	(304)263-1743	bclark@region9wv.com
Date of First Protection Team Meeting:		Protection Team Meeting was held Thursday, November 19, 2015 at Berkeley County Pswd-Potomac River. 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		PUBLIC MEETING JUNE 24, 2019 5:00 PM		

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 Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River 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

Berkeley County Pswd-Potomac River 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. Berkeley County Pswd-Potomac River 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
Gas Stations and Auto Repair Shops	1	Oils, antifreeze, and other automobile fluids can cause contamination of groundwater sources if not cleaned up and disposed of properly.
Highways (I81 and Rt. 11)	2	Both the Potomac River Intake and 3 groundwater supply wells serving the System are susceptible to accidental leaks and spills of vehicle fluids or hazardous freight. I-81 and Route 11 cross the Potomac River approximately 5 and 6 miles up-gradient of the Potomac River Intake, respectively. The area is underlain by karst terrain which puts groundwater sources at a higher risk from surficial contaminants as well. Both the I-81 Corridor and Route 11 also pass through the SWPA associated with the 3 groundwater supply wells serving the System.
Railroad Traffic	3	The railroad tracks run parallel to the source water. An accident on the railroad or leaks from standing train cars may result in spills into the water supply.
Wastewater Treatment Plants	4	There are several Wastewater Treatment Plants within and just outside the ZCC associated with the Potomac River Intake. Wastewater discharge poses a threat due to the introduction of nutrients (which may contribute to eutrophication) and pathogens.
Mining Operations and Fly Ash Pits	5	The Potomac River Intake is potentially threatened by heavy metals, which may leach from fly ash ponds and pits into nearby surface water bodies and shallow groundwater aquifers. These operations present a potential hazard through slow seepage of contaminated groundwater into the Potomac River via recharge pathways, or by the potential for ponds to rupture or burst, rapidly releasing potentially contaminated water into the Potomac River or shallow groundwater aquifer. There are several Fly Ash Pits and Surface Mining operations within the ZCC for the Potomac River Intake.
Industrial & Commercial Activity	6	Facilities such as gas stations and auto repair shops lie within and just outside both the ZCC and SWPA for the Potomac River WTP and pose a threat due to the potential for accidental leaks, spills, improper disposal of petroleum products and other wastes, or improperly managed stormwater runoff.
Sinkholes	7	When sinkholes occur a direct conduit from the surface to groundwater is created and natural soil filtration processes are bypassed. Water quality threats are dependent on land use. This hazard is applicable to the three groundwater supply wells serving the system.

Septic Systems & Public Sewer	8	The status of some older septic systems is unknown and failures and leaks are possible. Unlike other areas, in karst terrain a septic tends to fail downwards and can therefore be virtually undetectable. Public sewer expansion is more favorable, but sinkhole monitoring and leak detection are encouraged.
Agricultural activities	9	Due to agricultural land use in the area, nutrient levels can become elevated in surrounding surface water bodies and/or the underlying groundwater system.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Gas Stations and Auto Repair Shops	Communicate with owners the need for them to properly dispose of oil and other automobile products. Ask them to follow regulations and institute BMPs to contain and clean up spills. One such regulation is installing secondary containment around above ground storage tanks and/or chemical storage areas. Monitor compliance with state environmental regulations.	Steve DeRidder	Ongoing		
Gas Stations and Auto Repair Shops	Provide owners or operators with copies of material on underground storage tank maintenance. These facilities may already be implementing best management practices for monitoring and/or containing a potential leak or spill and may be reviewed.	Steve DeRidder	Completed		
Gas Stations and Auto Repair Shops	Consider whether operating or historic stations and shops are compliant with rules regarding USTs and leaking underground storage tanks (LUSTs). If you suspect an issue with an UST or LUST, contact the WVDEP at (304)926-0499 and ask for the Underground Storage Tank Staff for an inspection.	Steve DeRidder	Completed		

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Sinkholes	Region 9 will be researching available funding opportunities to create a SWPAspecific sinkhole management program. Currently, sinkholes that develop in the County are the responsibility of private land owners and other similar entities (including homeowner's associations). The goal of the sinkhole management program will be to assign responsibility for mitigation and repair to relevant parties, encourage routine investigations along key travel corridors and provide advice and funding opportunities for sinkholes that develop on lands within the SWPA. Implementation of this task will take many years and cooperation from multiple public and private entities. The recommended sinkhole management plan is broadly based upon the Carroll County, MD sinkhole management plan.	Region 9	Ongoing	Currently, there is not a specific government entity that oversees sinkhole mitigation and repair once lands have been developed. The Planning Department only has regulations in place to address existing sinkholes on lands that have not been developed.	Region 9 staff time researching available grant funding opportunities. BCPSWD staff time for utilizing funding information provided by Region 9. County Council, BCPSWD and DEP staff time for determining how best to allocate potentially available funds.
Sinkholes	New strategy	n/a	Not Started		
Mining Operations and Fly Ash Pits	BCPSWD will conduct a cost estimate and feasibility study of implementing an Early Warning Monitoring System to be located downgradient of these hazards, which would analyze water quality parameters indicative of a release from these facilities.	BCPSWD	Ongoing		

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Agricultural activities	BCPSWD will work with the County Extension Service, the Soil and Water Conservation District, and/or Natural Resources Conservation Service (NRCS) to encourage agricultural land owners to participate in nutrient management planning, forest conservation, land retirement and management programs (including riparian zone preservation or restoration) within the SWPA. Efforts here will focus on education and outreach measures.	BCPSWD	Ongoing	Nutrient management plans are not required for agricultural facilities within Berkeley County but are provided at no cost by the USDA NRCS.	BCPSWD staff time associated with raising local awareness of the existence of these programs.
Septic Systems & Public Sewer	BCPSWD will work with Public Sewer to develop a leak detection protocol and recommend areas which would benefit from incorporation into the public sewer system, as development occurs. BCPSWD will work with the Health Department, to the degree feasible, to encourage homeowners to maintain and routinely inspect their septic systems or replace old or failing septic systems with Best Available Technologies (BATs).	BCPSWD	Ongoing	BCPSWD will pursue this recommendation at the time of the next Sewer Expansion Plan update. Extending the gravity sanitary sewer system to every resident in the county is not feasible.	BCPSWD staff time and public sewer staff time to determine priority sewer expansion areas. Material costs associated with expansion of sewers. Staff time providing informational materials
Railroad Traffic	New stragegy	n/a	Not Started		

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Railroad Traffic	New strategyBerkeley County OHSEM will work with LEPC and other local emergency responders to utilize the training materials provided by CSX railways (i.e., planning guides and inperson/ on-site trainings, featuring a safety rail car) and their short line partners, which include Winchester and Western. OHSEM and emergency responders will also work with CSX to inquire about the Rail Respond program, which provides easy mobile access to critical information about what's traveling on CSX rails. Information regarding these programs is provided in Appendix F-7. Emergency personnel have also expressed interest in performing routine Emergency Response drills for Highway and Railroad spills. BCPSWD will work with WV DEP or BPH to perform a Hazmat Re-route request to prevent specific potential contaminants from being transported through system SWPAs. These entities, along with OHSEM, will work with railroad companies to discuss safety measures, emergency plans and inspection routine(s).	Mr. Eddie Gochenour	Ongoing	The Berkeley County OHSEM Director has already started a dialogue with CSX to request training materials and the use of the CSX training car within the next two years.	Staff time involving members from BCPSWD, DOT, OHSEM, other LEPC agencies and BPH and/or WV DEP. Staff time at the LEPC level, and for members of local emergency response stations (e.g., local fire department, police department, etc.).
Railroad Traffic	New strategy	n/a	Not Started		

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Industrial & Commercial Activity	BCPSWD will request Groundwater Protection Plans (GPPs) and/or stormwater management plans from WV DEP for commercial and industrial facilities located within the SWPAs. From these the utility will investigate what (if any) preventative pollution measures are already in place for these facilities. This will permit the utility to better understand protection strategies already in place at these facilities and more accurately determine the threat posed by specific facilities. BCPSWD will educate facility owners on the potential threat of sinkhole development caused by improper stormwater management. BCPSWD will distribute site-specific Best Management Practice lists, along with advanced hazardous materials containment options to facilities (which will include vaulted Above ground Storage Tanks) on an as-needed basis.	BCPSWD	Ongoing	Education outreach and voluntary strategies such as these are the most effective means of source water protection for this hazard at this time, as more restrictive localized regulations cannot be implemented.	BCPSWD staff time putting together information packets/materials for commercial business owners, as well as research time to pull GPPs from WV DEP records.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Highways (I81 and Rt. 11)	BCPSWD, in conjunction with Berkeley County OHSEM, will work with the Department of Transportation (DOT) to explore opportunities to create and manage prestocked emergency spill response kits at state operated facilities along highway and railroad corridors (including the facility at Tabler Station Road). Alternative plans will be arranged should an agreement not be reached by these entities. The county currently possesses 25 bags of absorbent on hand with the possibility of acquiring up to 50 additional bags from neighboring emergency response entities. These entities may contact Frederick County, VA for additional emergency response & coordination of emergency equipment. OHSEM will work with LEPC coordinators and other emergency personnel to ensure that BCPSWD receives timely notification in the event of highway or other roadway spills within SWPAs. BCPSWD and OHSEM will work with the DOT to explore traffic regulation options for key highway corridors, and revisit postings of source water protection signs along these roadways.	Mr. Eddie Gochenour	Ongoing		Staff time involving members from BCPSWD, DOT, and OHSEM. Material costs for additional spill response kits/absorbent bags.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Wastewater Treatment Plants	This potential threat might become less of an issue if the Potomac River Intake remained closed during stormflow events. BCPSWD will map the nearest WWTPs, assess time of travel, and establish communication pathways to receive notifications of failures.	BCPSWD	Ongoing		BCPSWD staff time assessing time of travel and communicating with wastewater treatment operators

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. Berkeley County Pswd-Potomac River 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
Public Workshops	Present Source Water Protection information at already scheduled public meetings (i.e. utility board meetings) and/or plan a Source Water specific Public Presentation.	BCPSWD	Ongoing	Status / Schedule will be evaluated based on participation and perceived need.	Staff time preparing for and hosting workshops
BMP Lists	Distribute lists of industry specific BMPs to the owners of (1) Gas Stations, (2) Car Repair Shops, (3) Agricultural Lands/Facilities within the SWPA (Future Farmers, etc.). Provide SWPP education materials.	BCPSWD	Ongoing		Staff time creating BMP lists using published/provided materials
General Information Dissemination	BCPSWD will include educational information on the following topics on their website for public use: source water protection, water conservation, household hazardous materials disposal, pharmaceuticals disposal, observing and reporting spills/leaks.	BCPSWD	Ongoing		Staff time pulling together information and making it available to public.
Early Education	Work with area schools to include source water protection information into the curriculum, or present information at assemblies or in classroom events (e.g., environmental science class).	BCPSWD	Ongoing		Staff time providing information to school system or attending events/classes

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Emergency Planning and Coordination	Participate with local fire departments and County Emergency Services on a regular basis. This will ensure that all the agencies understand the boundaries of the SWPA, are in constant communication with one another, and are prepared in the event of an emergency.	Steve DeRidder LEPC	Ongoing		
Display Information	Include informational materials (i.e., brochures, maps, etc.) in county government offices and other public places (i.e., local fairs). Host non-confidential SWPP online for public review and comment. Work with DOT for protection area sign expansion/coverage.	BCPSWD, Region 9 & WV BPH	Ongoing		Staff time creating and displaying relevant information
Become an PRBSWPP Member	At the outset of this SWAP, we recommended that BCPSWD become a member of the PRBSWPP (Potomac River Basin Source Water Protection Partnership), which is an interstate program that provides SWP education and outreach opportunities, among various other services oriented towards protecting and improving the quality of water for the Potomac River. BCPSWD has since joined this organization and participates in quarterly meetings and training/educational opportunities as they occur.	BCPSWD	Ongoing	BCPSWD is now an active member of the PRBSWPP.	Staff time attending and contributing to meetings.
Clean Up Events	Coordinate with local Clean Up efforts and publicize projects. Work closely with Watershed Associations in this regard.	BCPSWD	Ongoing		Staff time associated with watershed group coordination

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 Berkeley County Pswd-Potomac River 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. Berkeley County Pswd-Potomac River 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:	CONFIDENTIAL
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:	CONFIDENTIAL
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?	CONFIDENTIAL
Describe the process to close the intake:	CONFIDENTIAL
Describe the treated water system's storage capacity of the water system:	BCSPWD has 7 tanks and 1 storage tank on the site if the plant.
Gallons of storage capacity (raw water)	0
Gallons of storage capacity (treated water)	CONFIDENTIAL
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:	City of Martinsburg,Mutual Aid Agreement

11.2. OPERATION DURING LOSS OF POWER

Berkeley County Pswd-Potomac River 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?:	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 distribution system?:		Yes	
Please provide a scenario that best describes your system:		CONFIDENTIAL.	
What do you have (KW)?		CONFIDENTIAL	
What do you need (KW)?		CONFIDENTIAL	
Does the utility have fuel on hand for generator?:		Yes	
Hours:			
Gallons:			
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:		CONFIDENTIAL	

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. Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River

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 Berkeley County Pswd-Potomac River PSC Annual Report.

Table 14. Water Loss Information

Water pumped - Total Gallons:		1,144,655,000
*Water purchased - Total Gallons:		79,000
Total gallons of water pumped and purchased:		1,144,734,000
Total gallons of water loss accounted for except main leaks:	Mains, plaint, filters, flushing, etc - Total Gallons:	15,000
	Fire department - Total Gallons:	75,000
	Back washing - Total Gallons:	18,064
	Blowing settling basins - Total Gallons:	3,300
Total Accounted for Water Loss		111,364
Unaccounted for lost water - Total Gallons:		144,617,636
Water sold - Gallons:		1,000,000,000
Water Lost From Main Leaks:		5,000
Total Gallons of Unaccounted for Lost Water and Water Lost from Main Leaks:		144,622,636
Total percent unaccounted for water		13
Describe the measures to correct water loss greater than 15%:	Berkeley County has a leak detection program	

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.

Berkeley County Pswd-Potomac River 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?	West Virginia Department of Health, ICPRB	
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
	CONFIDENTIAL.	
	CONFIDENTIAL	
	CONFIDENTIAL	
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?	No	
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:		turbidity, temperature, Manganese, and pH are monitored and recorded on a daily basis prior to treatment
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	Capital Cost:	CONFIDENTIAL
	O&M Cost:	CONFIDENTIAL
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

Berkeley County Pswd-Potomac River 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. Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River 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 Berkeley County Pswd-Potomac River'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.

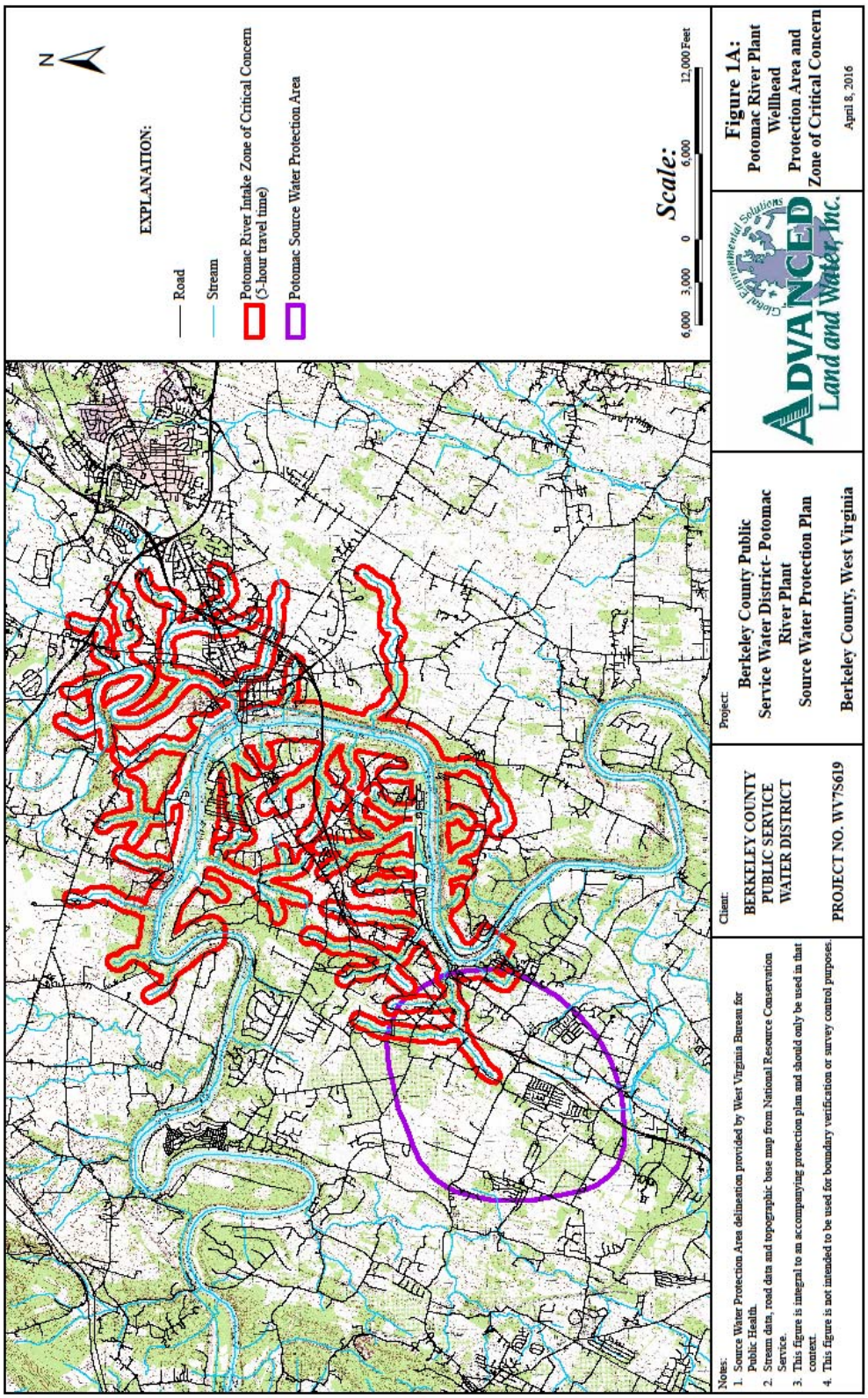
APPENDIX A. FIGURES AND TABLES

Water Source / Delineation

Surface Water Sources

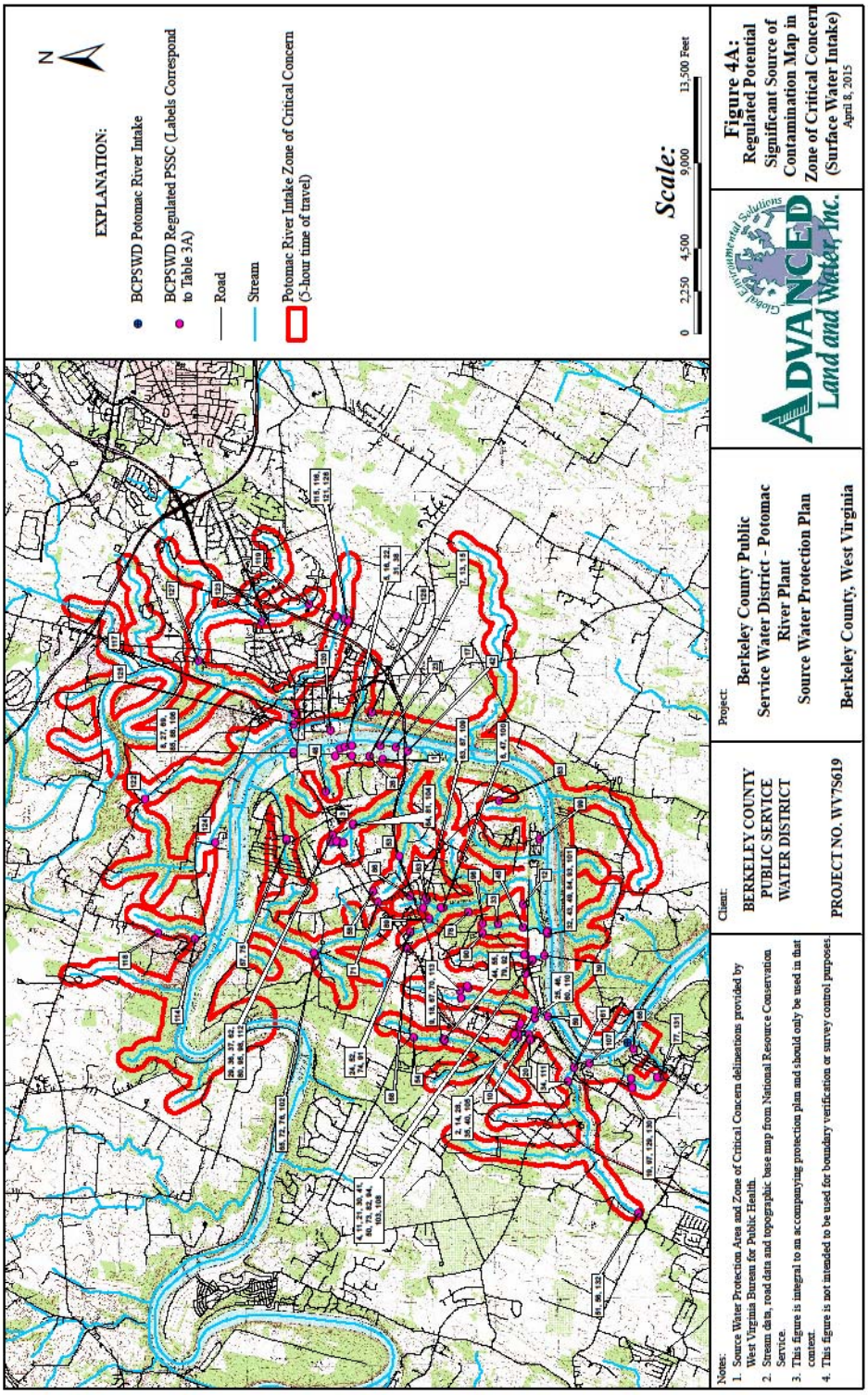
Intake: Potomac River

Map of watershed delineation area



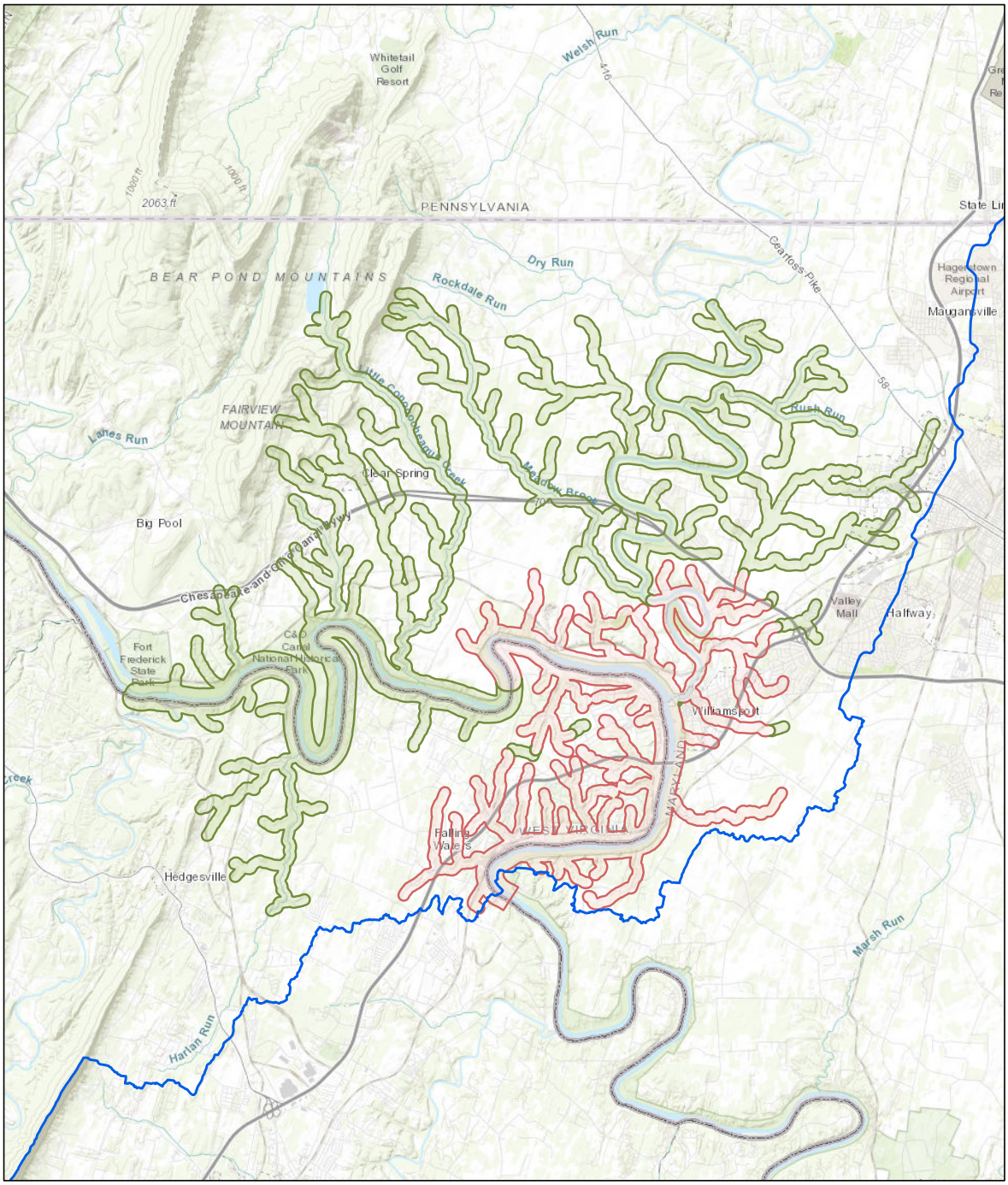
41

Map of zone of critical Concerns



Map of zone of peripheral Concerns

WV3300218 ZPC



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0 1.25 2.5 5 mi

0 2 4 8 km

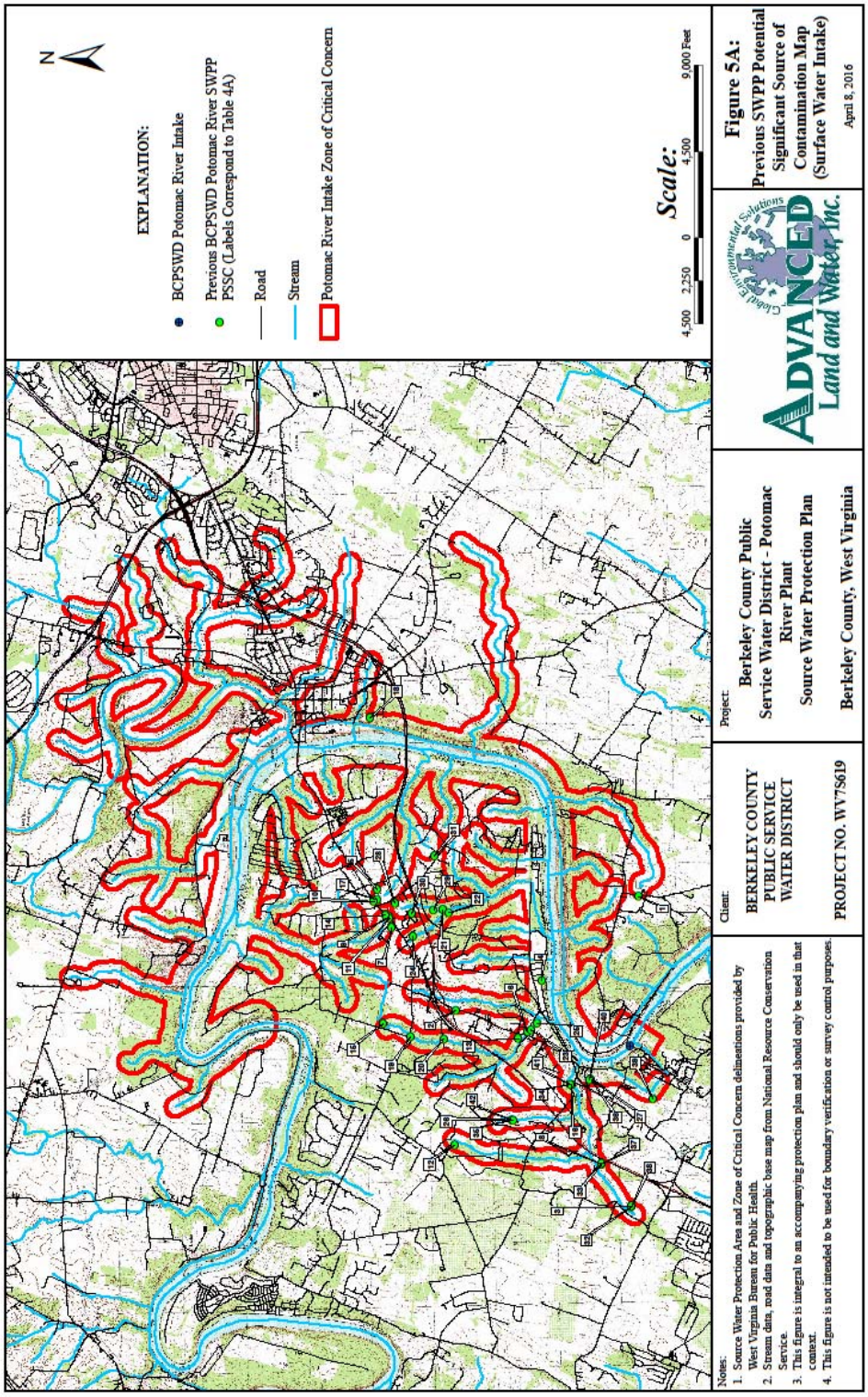
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Source Water Assessment and Wellhead Protection Programs

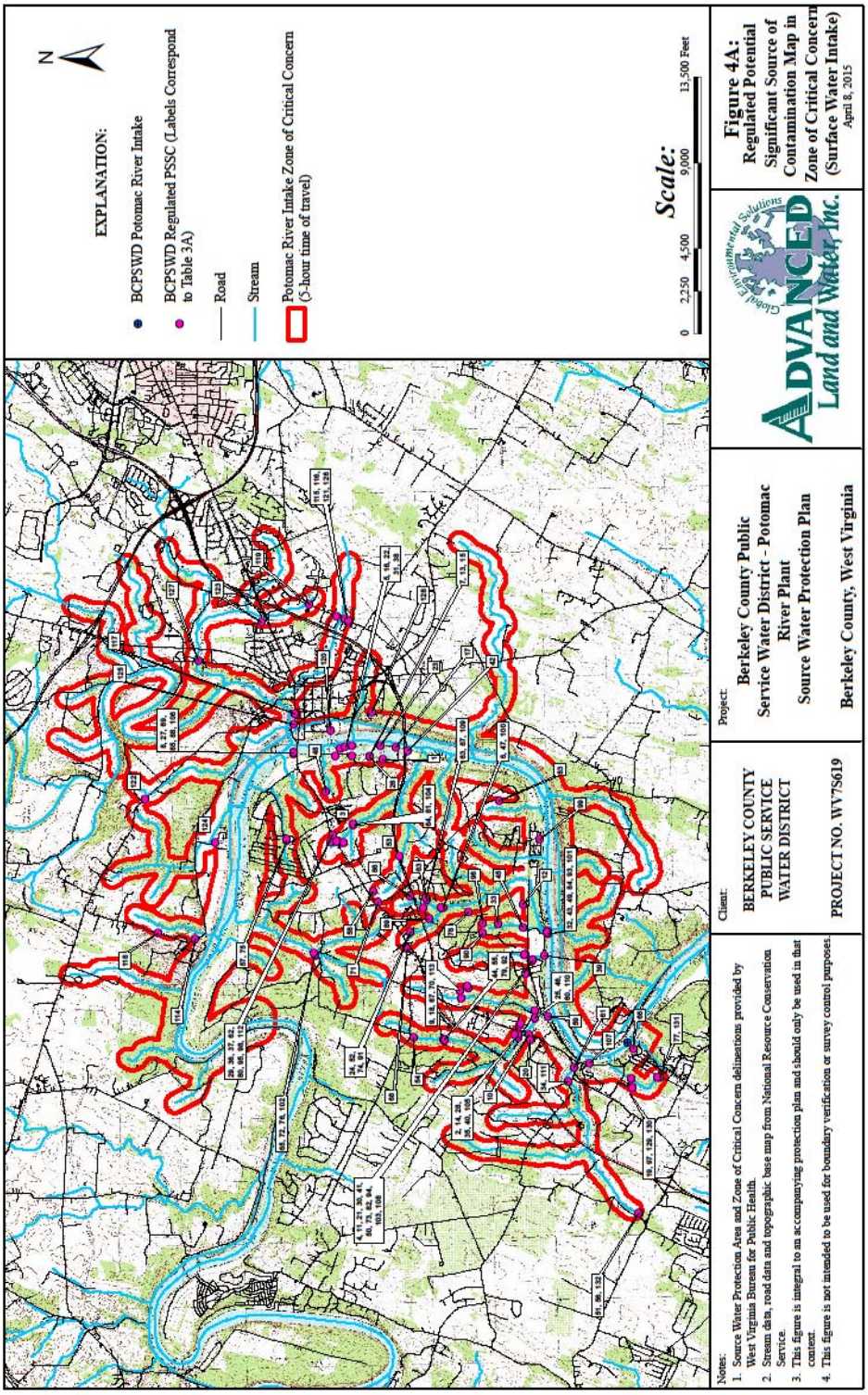
Ground Water Sources

Intake: WL001

PSSC Maps


N
EXPLANATION:
BCPSWD Potomac River Intake
Previous BCPSWD Potomac River SWPP PSSC (Labels Correspond to Table 4A)
Road
Stream
Potomac River Intake Zone of Critical Concern
Scale:
4,500 2,250 0 4,500 9,000 Feet
Figure 5A:
Previous SWPP Potential Significant Source of Contamination Map (Surface Water Intake)
April 8, 2016
ADVANCED Land and Water Inc.
Global Environmental Solutions
Project:
Berkeley County Public Service Water District - Potomac River Plant
Source Water Protection Plan
Berkeley County, West Virginia
Client:
BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT
PROJECT NO. WV7S619
Notes:
1. Source Water Protection Area and Zone of Critical Concern delineations provided by West Virginia Bureau for Public Health.
2. Stream data, road data and topographic base map from National Resource Conservation Service.
3. This figure is integral to an accompanying protection plan and should only be used in that context.
4. This figure is not intended to be used for boundary verification or survey control purposes.

Regulated PSSC Map



PSSC Lists

Prepared By:

Steve De Ridder

Title of Preparer:

Superintendent of Operations

Name of Contractor(s)/Consultant(s) (if used):

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

Signature of responsible party or designee authorized to sign for water utility:

Print Name of Authorizing Signatory (see instructions):

Title of Authorizing Signatory:

Date of Submission (mm/dd/yyyy):

10/05/2021

Appendix C. Communication Plan

Communication Plan Template

For The BCPSWD Potomac River Plant Public Water System

PWSID: __WV3300218_____ District: _____Kearneysville_____

Certified Operator: ___CONFIDENTIAL_____

Contact Phone Number: _____

Contact Email Address: _____

Plan Developed On: _5/24/2016__ Plan Update Due On: _5/24/2019__

ACKNOWLEDGMENTS:

This plan was developed by Berkeley County Public Service Water District 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.

Table of Contents

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 occurring 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 also provides associated risk levels.

> **A** = **A**nnouncement. 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 = **B**oil Water. 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 = **C**annot 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 = **D**o 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 = **E**mergency. Water cannot be used for any reason.

Tier	Tier Category	Risk Level	Tier Summary
A	**A**nnouncement	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	**B**oil 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	**C**annot 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	**D**o 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	**E**mergency	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	Role
CONFIDENTIAL				
CONFIDENTIAL				
CONFIDENTIAL				

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 SWPP, 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 SWPP 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; as well as working with the management staff and the communication team to ensure that 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. 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 collecting information about 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., **A**nnouncement, **B**oil Water, **C**annot Drink, **D**o Not Use, or **E**mergency)
  - o 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
  - o If warranted by initial findings regarding the spill, release, or incident
- ❑ Notification of the WV Bureau for Public Health
  - o As required
- ❑ Periodic information updates, as incident response information is received
- ❑ Updates to the applicable A-B-C-D-E advisory tier, as necessary

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 Number	Email
Designated spokesperson:	CONFIDENTIAL		
Alternate spokesperson:			
Designated location to disseminate information to media:	251 Caperton Boulevard Martinsburg, WV 25403		
Methods of contacting affected residents:	BCPSWD utilizes the radio, newspapers and Television.		

	Name	Title	Phone Number	Email
Media contacts:	Bill Kohler; The Herald Mail Co.	Editor	301-733-5131	billk@herald-mail.com
	The Journal	-	304-263-8931 ext. 125	-
	WRNR – Main Line	-	304-263-6586 304-263-6540	info@talkradiowrnr.com
	WKMZ – Main Line	-	304-263-2770	-
	WYII	-	304-263-0637	-
	WEPM 1340	-	304-263-8868 304-263-4321	-
	WHAG Channel 25	-	301-797-4400	-

Emergency Services Contacts

	Name	Emergency Phone	Alternate Phone	Email
Local Police	Berkeley County Sheriff's Office	911	304-267-7000	
Local Fire Department(s)	Bedington Fire Department	911	304-274-2381	
	Williamsport Fire Department	911	301-223-9112	
Local Ambulance Service	Berkeley County Emergency Ambulance Authority	304-274-5013		
Hazardous Material Response Service	Berkeley County Office of Emergency Services	911	304-263-1345	

Sensitive Populations

Other Communities that are served by the Utility:	BCPSWD Potomac River WTP has interconnections with the City of Martinsburg PWS and the BCPSWD Bunker Hill PWS.			
Major User/Sensitive Population Notification	Name	Emergency Phone	Alternative Phone	Email
	Dialysis Center, BMA of Martinsburg	(304)263-0964		
	ABC Learning Train	(304)270-1023		
	Bedington Elementary	(304)274-2535		
	Eagle School Intermediate,	(304)263-0422		
	Eastern Panhandle Training Center,	(304)754-7921		
	Heartland Nursing,	(304)263-8921		
	Hedgesville Elementary,	(304)754-3341		
	Hedgesville High,	(304)754-3354		
	Hedgesville Middle,	(304)754-3313		
	James Rumsey Vocational Technical	(304)754-7925		
	Kid Kingdom,	(304)754-3778		
	Lil Angels Play	(304)274-1891		
	Marlowe Elementary,	(304)274-2291		
	Mountain Heart,	(304)262-1584		
	North Middle School,	(304)267-3540		
	Opequon Elementary,	(304)267-3550		
	Potomac Elementary,	(304)274-6592		
	Spring Mills Middle,	(304)274-5030		
	Tiny Tot's Village	(304)264-1433		
	Tomahawk Elementary	(304)754-3171		
	Tuscarora Elementary	(304)267-3565		
	Fed Ex,	(304)264-8757		
	General Motors,	(304)267-5678		
	MAAX, (Aker	(304)262-3669		
	Quad Graphics,	(304)260-7000		
EED District Office Contact	Name	Phone	Email	
	Alan Marchun	(304)725-9453	alan.f.marchun@wv.gov	

Key Personnel

	Name	Title	Phone	Email
Key staff responsible for coordinating emergency response procedures?	CONFIDENTIAL			
	CONFIDENTIAL			
Staff responsible for keeping confidential PSSC information and releasing to emergency responders:	CONFIDENTIAL			
	CONFIDENTIAL			
Are you planning on implementing the TIER system?	Yes			

Emergency Response Information

Has the utility developed a detailed Emergency Response Plan in accordance with the Public Health Security Bioterrorism Preparedness and Response Pan Act of 2002 that covers the following areas?	Yes
When was the Emergency Response Plan developed or last updated?	October, 2020

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- Warren Von Dollen
Phone; 304-356-4290
Cell; 304-550-5607
e-mail; warren.r.vondollen@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/

Appendix D. Single Source Feasibility Study

The single source feasibility study is required for a public water utility which is served by a single surface water source or a single groundwater source (i.e., one well or one spring). The BCPSWD Potomac River WTP has one or more alternative supply sources in place at this time; see **Appendix E** for details. As a result, a single source feasibility study is not required for this utility at this time.

Appendix E. Feasibility Study Narrative

The BCPSWD Potomac River System has multiple sources that eliminate the necessity for the single source analysis. The Potomac River WTP possesses two source types (a groundwater wellfield and a surface water intake) that are independent of one another. BCPSWD Potomac River WTP has an intake on the Potomac River, the capacity of which is higher than average system demand (2.4 MGD). The Potomac River WTP also utilizes three groundwater supply wells located northwest of the intersection of Interstate-81 and Hammonds Mill Road (Route 901), which are capable of providing up to approximately 2 MGD. Finally, the system already has active interconnections with the City of Martinsburg and the BCPSWD Bunker Hill WTP. BCPSWD has a purchase agreement with the City of Martinsburg for up to 1,000,000 gpd. They currently utilize approximately 250,000 gpd of the 1,000,000 gpd agreement, leaving approximately 750,000 gpd for use during emergencies.

In the event that the groundwater supply wells become contaminated (two are in close proximity while the third is significantly further downgradient from the upgradient two wells), BCPSWD can rely on the Potomac River Intake, as well as its interconnections, if deemed necessary. Should the Potomac River Intake become contaminated, as occurred during an October 2015 latex spill, the System would rely upon its three groundwater supply wells, which cannot meet system demands on their own. These three wells can supply approximately 1.6 MGD. To supplement the limited supply, the System can and does increase the amount of water purchased from the City of Martinsburg. Doing so permits them to meet their supply demand for the required 30, 60 and 90 day periods.

The Potomac River WTP utilizes seven storage tanks throughout the distribution system. The combined total treated water storage of the seven tanks is 5.25 MG. At this capacity, the Potomac River WTP has approximately two days of storage. Lotic water bodies (including the Potomac River) oftentimes do not remain contaminated for extended periods (as can groundwater sources) because of high flow rates and associated travel times. The amount of time that an intake would need to remain closed is dependent on Potomac River flow rates, gradient and travel times of potential contaminants sources. Comparatively, groundwater travel times are significantly slower, and such supplies may need to remain offline for longer periods of time when contamination events occur. Because of this, it seems unlikely that the Potomac River Intake would need to remain closed for extended periods up to 30, 60 or even 90 days.

Appendix F. Supporting Documentation

Appendix F-1. ALWI PSSC Update and Source Inspection

Appendix F-2. Locally Identified PSSC Database Search

Appendix F-3. BCPSWD – Potomac River WTP SWARs

Appendix F-4. BCPSWD Potomac River WTP Protection Team Meeting Minutes

Appendix F-5. Emergency Response Plan Signature Page

Appendix F-6. Engineering Evaluation

Appendix F-7. Railroad Emergency Response Trainings and Services

Appendix F-1. ALWI PSSC Update and Source Inspection

Advanced Land and Water, Inc. (ALWI) performed regulatory database reviews and a desktop review/reconnaissance in order to identify changes to known PSSCs and to identify and record additional PSSCs not previously documented. The desktop review/reconnaissance also included verifying water source locations and reviewing the delineated SWPA. Both point sources and non-point sources of contamination were considered during our desktop review.

Appendix F-2. Locally Identified PSSC Database Search

ALWI incorporated information from the following state-maintained environmental databases to supplement the non-confidential point-source hazard inventories, with the date of database publication provided parenthetically as follows:

- WV Department of Agriculture; Pesticide Program Database search for Pesticide Businesses, Regulated Pesticide Application Businesses (RPAB), Pesticide Dealers and Commercial Applicators (2/19/2016);

- WV DEP Office of Environmental Remediation; Public Record of Voluntary Cleanup Program Sites (2/19/2016);

- Underground Storage Tank and Leaking Underground Storage Tank Databases (2/19/2016);

- EPA System Data Search of RCRAInfo Database for Resource Conservation and Recovery Act (RCRA) sites (2/19/2016).

The databases helped with interpretations of water susceptibility, in that the listed facilities may be generators of hazardous materials, petroleum products and/or other drinking water contaminants.

Appendix F-3. BCPSWD – Potomac River WTP SWARs

Appendix F-4. BCPSWD Protection Team Meeting Minutes

Bunker Hill WTP *and* Potomac River Plant

Protection Team Meeting

November 19, 2020

251 Caperton Blvd. Martinsburg, WV

In Attendance:

Jim Ouellet.....BCPSWD

Steven DeRidder.....BCPSWD

.

Bill Clark .....Eastern Panhandle Regional Planning & Development Council

Jennifer O'Brien .....Eastern Panhandle Regional Planning & Development Council

Eddie Gochenour .....Berkeley County Office of Homeland Security & Emergency Management

Alana Hartman .....West Virginia Department of Environmental Protection

Monica Whyte .....West Virginia Bureau of Public Health

Mike Thompson .....Berkeley County Planning Commission

Interested Participants Who Could Not Attend:

Regina (Suzy) Lucas .....West Virginia Conservation Agency

Joseph A. Castaldo .....West Virginia Department of Transportation

Invitees Who Did Not Respond:

Penny Shewell .....Berkeley County Council Office Administrator

Stephen L Christian .....Berkeley County Development Authority

Manny P. Arvon .....Berkeley County Schools

Tina Combs .....Martinsburg-Berkeley County Chamber of Commerce

Ashley Petrolino .....Berkeley County Health Department

Matt Ware.....Berkeley County Farm Bureau

Tim Canfield.....USDA Natural Resources Conservation Service

Dolly Vessella .....Winchester and Western Railroad

Dave Scott .....CSX Corporation

Eric Lawrence.....Frederick County, VA Department of Planning

Meeting Objectives:

The purpose of this meeting was to establish a Protection Team, an entity which will work to forward source water protection efforts and strategies for the BCPSWD Bunker Hill and Potomac River Systems. More specifically, the Team worked to prioritize the major Potential Significant Sources of Contamination, critical areas, and other threats deemed of greatest concern to the systems' water supply sources. Management Strategies and Implementation Plans were developed for the highest priority threats. Education and Outreach Strategies were also discussed, and Implementation Plans were created for these and other management activities. Finally, the Protection Team reviewed additional general recommendations ALWI made for both of the water Systems.

Timeline of Events:

Following formal introductions from participating Protection Team members, ALWI staff began a PowerPoint in which we explained the hydrogeologic setting of Berkeley County and broadly covered general system information pertaining to water source location and delineated areas that influence system sources, which are termed source water protection areas (SWPAs). From there, we introduced our list of prioritized PSSCs, management strategies related to those PSSCs and education and outreach strategies to engage and educate the public on source water protection efforts. We then asked the Protection Team to opine on our PSSC list and edit prioritization, if and where appropriate. We discussed implementation measures for protection strategies, as well

as education and outreach strategies, and assigned responsibility to Protection Team members who volunteered to handle each strategy. We ended the meeting by presenting additional general system recommendations, which broadly covered better physical protection measures (e.g., fences) and investigative studies.

Discussion of Public Involvement and Future Public Workshop Meetings:

During the course of the meeting, the Protection Team discussed the degree of public involvement required and concerns about the confidentiality of specific information (PSSC Inventory) when engaging the public. This was brought about by discussion of the future public workshop meeting and conceptualization of hosting a draft SWPP (that does not contain confidential information) on BCPSWD's website, for the purpose of garnishing additional public comment and feedback. BPH opined that this could be an effective method of keeping the public informed of Source Water Protection activities, as long as confidential information (i.e., that information that isn't accessible to the public online) is omitted from the document.

Monica Whyte informed the Protection Team that the BPH will hold public hearings (possibly grouping Systems together based on geographic location) after they have received and reviewed the completed Source Water Protection Plans from required systems throughout Region 9. This hearing does not satisfy the requirements, nor take the place of the public workshop that each utility is required to hold for their relevant systems. Feasible methods of advertising such workshops were also discussed; BCPSWD has contacts with local newspapers and radio stations, and has the ability to advertise on their website, Facebook page, and posted notices at the BCPSWD office.

Bunker Hill System Specific Discussions:

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During the presentation, we displayed current and future land use maps, with the BPH delineated SWPA overlain. The future growth area maps, which we acquired from the Berkeley County

Council website, depict anticipated land development in close proximity to the LeFevre Spring, and in areas associated with major faults and conduits associated with the spring. Much of the development area is anticipated to occur between and west of the Route 11 and I-81 corridors. The maps also showed that approximately one-third of the SWPA is located in Frederick County, VA in locations where zoning maps indicate future industrial and commercial growth will occur. Eric Laurence, Director of the Frederick County, VA Department of Planning was invited to the Protection Team meeting, but did not respond. ALWI recommended that the System continue to work with representatives from the Frederick County Department of Planning to limit incompatible land use development within the Bunker Hill SWPA.

ALWI-identified PSSCs and Critical Areas within the Bunker Hill SWPA were presented and discussed, with ALWI staff explaining the basis for each potential threat. Prior to the meeting, ALWI had prioritized these potential threats, as follows (in order from highest priority to lowest priority; see Table 8):

1. Highway (I-81) Corridors
2. Railroad Networks
3. Sinkholes
4. Commercial Activities
5. Septic & Sewer Systems
6. Agricultural Activities
7. New Growth Areas

ALWI asked that the Protection Team consider the threats, add additional threats conceived by the team, assess the prioritization of the threats and make any revisions to prioritization, as presented to the team. The Protection Team did not recommend any revisions to the ALWI-identified and prioritized table of PSSCs and Critical Areas.

Management Strategies developed and recommended by ALWI for each of these priority concerns were discussed thereafter (see Table 9). During the discussion, team members volunteered to handle implementation of the recommended management strategies. Relevant management and implementation strategies were discussed as follows:

- **Highways -** In response to an ALWI recommendation to establish emergency spill response stations, Mr. Eddie Gochenour explained that OHSEM currently has 20-25 absorbent bags available for the cleanup of spills and leaks. Mr. Gochenour deemed that this would be enough for small spills, but not large spills associated with train derailments and tanker truck accidents. Mr. Gochenour indicated that Berkeley County can receive mutual aid from Washington County, MD, who maintains an inventory of two pallets of absorbent, with each pallet containing 20-25 bags of absorbent. Mr. Gochenour agrees that pre-stocked response stations at key locations could decrease response time in the event of a spill. In this regard, Mr. Gochenour recommended reaching out to Joseph A. Castaldo with the Department of Transportation to discuss storage options for spill response equipment at the State Highway facility located on Tabler Station Road, which is located between the City of Martinsburg and Town of

Inwood. Alana Hartman added that as a "one-time-expense" project, there is a possibility that funding for instituting emergency stations could be sought through local watershed groups. The responsibility of re-stocking the emergency resources would be put on the carrier or entity responsible for the spill.

- **Railroad -** ALWI recommended that Berkeley County emergency personnel work with CSX and their shortline partners and take advantage of free training (online and in classroom) offered by the railroad corporation. These training exercises include online workshops, training at emergency personnel facilities, and train car response workshop activities. Mr. Gochenour informed the Team that he is working with Joe Taylor (CSX) to schedule tabletop and onsite trainings for railroad accidents and spills. He anticipates that onsite drills will begin to take place as early as 2016, and that the recommendations provided in Table 9 (relating to highways and railroads) will be implemented within a two-year time period.

- **Sinkholes** - Due to the presence of karst terrain, which underlies the region and encompasses the majority of both SWPAs, ALWI recommended that the System work with the County to establish a Sinkhole Management Program, possibly modeled after the Carroll County, MD Sinkhole Management Program. ALWI explained the general outline of the Carroll County Sinkhole Management Plan, whereby the locations of known sinkholes and karst geology boundaries are mapped, responsible parties for sinkhole formation and mitigation are established and/or determined, protocol for regular sinkhole inspections on County lands are instituted and cost-sharing initiatives for sinkhole mitigation are presented. When asked what policies Berkeley County presently has in place for sinkhole management, Mike Thompson stated that from a planning perspective, the Council becomes aware of the presence of sinkholes on private lands through the subdivision ordinance and associated planning requirements. Developers are required to establish buffers around known sinkholes, and residents are encouraged to establish buffers around or mitigate sinkholes that come to form on their land. Sinkholes located on land to be developed must be mapped and reported to the planning commission. A 50 foot buffer is required around existing sinkholes. Mr. Thompson added that roadways in the County are all privately owned, excluding State roads maintained by the Department of Transportation, which is no longer accepting incorporation of privately built roads. This presents a problem when a sinkhole forms on a private roadway because the responsibility of onerous repair efforts falls on one or more residents or homeowners associations. Berkeley County is dealing with such a situation currently. The lack of zoning in the County impedes land use restriction efforts and makes it difficult to establish sinkhole regulations through ordinances or other related measures. The Team discussed alternative options for implementing sinkhole regulations. Currently there are minimal sinkhole requirements embedded into County Stormwater Regulations, which are presently being updated. Matt Pennington is responsible for the draft stormwater regulations. This could present a possible avenue to incorporate more stringent sinkhole management regulations. WV State Code also provides for protective efforts to be established in wellhead protection areas. A sinkhole management strategy would be far more feasible if it is focused on SWPAs or other critical areas within the County, rather than as a County-wide regulation. Mr. Bill Clark and Ms. Jennifer O'Brien with the

Eastern Panhandle Regional Planning & Development Council expressed a willingness to identify funding opportunities for implementation of a preliminary sinkhole management program.

- **Commercial Activities** – While a limited number of commercial facilities exist within the Bunker Hill SWPA, two of the existing facilities identified by BPH included gas stations. ALWI also came to identify a number of auto repair and maintenance shops scattered throughout the SWPA. These facilities were discussed briefly. The Protection Team decided it would be appropriate to request site information from the Department of Environmental Protection and confirm that auto repair facilities were legal and properly disposing waste products. The Protection Team also felt it would be appropriate to provide site-specific Best Management Practice (BMP) documents to these commercial facilities to raise awareness about source water protection efforts and ensure potential contaminants are disposed of using best available methods.

- **Septic System(s) -** The Protection Team decided to hold off on implementation of related management activities until the next time the Sanitary Sewer Service plans to assess the feasibility of sewer extension/expansion, which will occur concordantly with development. The team discussed how the DEP Non-Point Section of the Division of Water and Wastewater Management works to assist and encourage residents to properly maintain their septic systems and maintains information regarding which systems are in need of attention. As a result, ALWI recommendations will be coordinated with other agencies at a later date.

- **Agricultural Practices** - The Team discussed recommended management activities for farmlands within the SWPA; accepting our recommendations without a set time limit for implementation. Ms. Alana Hartman indicated that West Virginia does not require Nutrient Management Plans for agricultural facilities, but that they are developed and provided at no cost.

- **New Growth** - When discussing relevant management activities, the Berkeley County Planning Commission reiterated that they do not possess the ability to enforce low impact development practices directly due to the absence of zoning in Berkeley County, presently. The Protection Team is turning towards alternate avenues of land use restrictions and purchasing opportunities, which include coordination with the Farmland Protection Board and other Land Protection programs/agencies. In this regard the System could consider working with Farmland Protection to request a higher point value (system of ranking the program uses; corresponding to the amount of funding given) to properties within the SWPA which are near the System's sources or overlying mapped fractures and faults associated with System sources.

During the course of the meeting, the Communication Plan component of the SWPP was discussed. The plan requires that a Communication Team be formed and comprised of personnel who would play an integral part in disseminating information between the system, the public and

other entities involved, should an emergency contamination event occur. ALWI recommended to the System that invitations be extended to local emergency and law enforcement personnel in this regard. However, ALWI also pointed out to Protection Team members that diagrams depicting the chain of communication/command in the event of a contaminant occurrence are provided in BCPSWDs confidential Emergency Response Plan (ERP), which BPH possesses and will receive an update to at a later date. This ERP outlines the means by which information will be disseminated to the public in a timely manner. Recent public notifications by BCPSWD regarding the latex spill on the Potomac River indicate that the ERP is sufficiently well designed and organized to effectively notify water users in a timely fashion.

When discussing the generalized and non-confidential web of communication followed by different entities in the event of a spill or other emergency, it became apparent that there is a delay in the time it takes information gathered by first responders and emergency personnel to be shared with water suppliers. Eddie Gochenour stated that when a spill or other contamination emergency is reported to their dispatch station, the EPA has asked that they be notified directly. From there, notifications would then be sent out at the State and then the Local levels. It is important to note that this system is not currently in place or finalized, and is just a concept proposed by the EPA.

The Education and Outreach Strategies recommended by ALWI were discussed, and responsible members were chosen for each category (See Table 10).

Appendix F-5. Emergency Response Plan Signature Page

EMERGENCY RESPONSE PLAN
WATER SECTOR

Public Water System Name: BCPSWD – Potomac River WTP

PWSID No: WV3300218

Physical Address: 251 Caperton Blvd.

City: Martinsburg
State: West Virginia
Zip Code: 25403
General Phone Number: 304-267-4600

Population Served: 22,396
Municipalities Served: 1

Prepared by (signature & title): [signature] Chief Operator

Reviewed by (signature & title): [signature] Executive Director

Date Completed: [illegible] 2004 **(June 2004)**

Date Revised: [illegible] 2015 **(November 2015)**

Appendix F-6. Engineering Evaluation

CONFIDENTIAL

Appendix F-7. Railroad Emergency Response Trainings and Services

The information included in this Appendix may be found at the following web addresses (respectfully):

Online Education:

- General - https://www.csx.com/index.cfm/about-us/safety/community/emergency-responder-training-and-education/
- Online Trainings – www.csxsafe.com
- Planning Guides – http://csxhazmat.kor-tx.com/
- Additional Training Opportunities - http://www.beyondourrails.org/index.cfm/safety/

Rail Respond:

- Program Information – http://www.beyondourrails.org/index.cfm/safety/respond/

Safety Train:

- Program Information – http://www.beyondourrails.org/index.cfm/news-stories/articles/csx-safety-train-delivers-enhanced-outreach-to-first-responders-and-communities/
- Related Article – http://www.richmond.com/business/article_6b1526cf-e3fe-55d4-bec6-37601609a875.html
- CSX Corporate Social Responsibility Report (additional information on the Safety Train program may be found on page 50) - https://www.csx.com/index.cfm/library/files/responsibility/csr-report-files/corporate-social-responsibility-report/

Community

Rail Security Partnerships

Emergency Responder Training and Education

Emergency Responder Training and Education

CSX provides emergency planning assistance and training to local fire, police and emergency response personnel in the communities we serve.

Online Training at CSXSAFE.com

CSX hosts a free online training program to educate emergency personnel on how to safely respond to incidents on and around railroad property and equipment.

CSXSAFE offers participants the opportunity to gain an understanding of how railroads operate, including some of the hazards of working around the rails and necessary protocols to keep responders safe.

The web-based program takes less than an hour to complete and is intended to provide important information to public agency personnel in fire and police departments, rescue and emergency medical organizations about basic rail safety precautions, railroad operations, initial-response procedures, types of rail equipment and who to call in an emergency.

Upon completion of the training modules, participants take a quiz, print a certificate of completion and are able to browse through upcoming in-person training opportunities being offered across the CSX network.

Training Materials

The CSX Transportation Public Safety and Environment department provides free training and emergency planning materials for emergency response agencies. Visit our Training Materials for Emergency Responders page to request any of the following items:

- Community Awareness Emergency Planning Guide
- Emergency Response to Railroad Incidents Self Study Guide
- Emergency Response to Railroad Incidents Self Study Video
- Locomotive Emergency Response Operations Video

Related Links

Corporate Social Responsibility

CSX Police Department

Emergency Responders

SAFE
CSX Safety Awareness For Emergencies

CSX

WELCOME TO CSX SAFE,

a course designed by CSX to help local emergency responders manage incidents involving rail property and equipment. CSX is dedicated to managing safe railways, and by working together with professionals like you, we can better protect and serve the communities in which we live and work.

Emergency response procedures require attention to detail. While this site is geared toward all responders, CSX provides discipline-specific training for police, fire & rescue, and other response agencies.

Once you've passed the quiz and are ready to take your emergency response training further, please visit the "More" section of this site.

To save your quiz progress, receive your certificate, or enroll in live training, you must have cookies enabled and be logged in.

CSX Transportation is a proud member of TRANSCAER

TRAINING MATERIALS FOR EMERGENCY RESPONDERS

Welcome

The CSX Transportation Public Safety and Environment department provides training and emergency planning materials for emergency response agencies free of charge. On this website, you can request the following items:

- Community Awareness Emergency Planning Guide
- Emergency Response to Railroad Incidents Self Study Guide
- Emergency Response to Railroad Incidents Self Study Video
- Locomotive Emergency Response Operations Video

Please follow the directions below to request these materials.

To login, please select the agency type with which you are affiliated.
You will need to provide evidence of your need for the materials requested before your order is filled.

CSX Transportation provides training materials to response agencies located in the states in which we operate. Due to the high demand for these training products, CSXT cannot provide materials for agencies in states other than those served by CSXT. If you are associated with a response agency west of the Mississippi River, Wisconsin, or any other area not served by CSXT, you should contact the railroad company operating in your jurisdiction for training.

TRANSCAER®

CSX Transportation proudly supports TRANSCAER® (Transportation Community Awareness Emergency Response), a voluntary national outreach effort that focuses on assisting communities prepare for and respond to a possible hazardous material transportation incident.

City/County Government
Consultant/Private Company
CSX Employee
EMA - County
EMA - State
EMS
Fire Department - Paid
Fire Department - Volunteer
Police
State/Federal Government

GO ▶

Alternatively, you may login as an authorized CSX employee with your email address and password.

Username:

Password:

LOGIN ▶

Forgot Your Password?

Play It Safe

Youth Safety Outreach

Rail Respond

Safety

At CSX, safety encompasses every aspect of company operations. Guided by a policy to ensure the safety of our employees, our customers and the communities we serve, CSX works relentlessly to prevent injuries and accidents through education, programming and advocacy at all levels.

Youth Safety Outreach

Play It Safe Outreach Campaign

Rail Safety First Responders

Through Rail Respond, CSX and First Responders work hand-in-hand to seamlessly share information to safeguard the communities and customers they serve.

LEARN MORE

Safety Train

Emergency Responder Training

Rail Respond

Online Training

Training Materials

VIEW ALL >

Safety

Play It Safe

Youth Safety Outreach

Rail Respond

Rail Respond

CSX Rail Respond is the first program of its kind among Class I railroads. It provides firefighters, police officers and other emergency responders with easy mobile access to critical information about what's traveling on CSX rails.

Designed specifically to aid first responders in the event of a rail emergency, CSX Rail Respond quickly identifies the contents of rail cars carrying hazardous materials. Through the mobile website, responders can securely access:

- Real-time information on the contents of rail cars.
- Real-time complete train list information.
- A suite of other useful emergency response information designed to assist when responding to a rail-related transportation emergency.

This innovative system builds on CSX's longstanding commitment to communicate with, collaborate with and train first responders in hopes of advancing our top priority: the safety of our communities, our employees and our customers' freight.

CSX Rail Respond, designed to work on smartphones, tablets or desktop PC, can be accessed through iPhone, Android devices and most browsers.

First responders can request access at www.csxrailrespond.com .

Youth Safety Outreach

Play It Safe Outreach Campaign

CSX Safety Train Delivers Enhanced Outreach to First Responders and Communities

CSX's Safety Train: Energy Preparedness Program, with rolling classrooms and specialized hands-on training, has taken to the rails on an expanded first responder training initiative. The train will travel over much of the company's crude oil service territory over the next several months.

This CSX Safety Train will begin in mid-May, visiting numerous communities in Pennsylvania, New York, New Jersey, Ohio, Indiana and Illinois. The company's enhanced training program offers fire fighters, police officers, emergency medical technicians and other first responders insights on how rail cars work and how to deal with rail incidents. CSX's first responder training already reaches hundreds of emergency personnel each year.

Upcoming training sessions will include Philadelphia; South Kearny, N.J.; Kingston, Albany, Syracuse, Rochester, Buffalo and New York, N.Y.; Erie, Pa.; Cleveland and Willard, Ohio; Garrett, Ind.; and Chicago. More details will be provided as the schedule is finalized.

"As the market for shipping crude oil has grown, so has our commitment to and responsibility for moving those shipments safely and efficiently," said Skip Elliott, CSX's vice president-public safety, health and environment. "This year, in light of increased crude oil movements on our network, we have expanded our engagement with first responders and emergency personnel along key routes to include training specific to crude oil movements."

The CSX Safety Train is comprised of a locomotive, four tank cars, one flat car equipped with a variety of tank car valves and fittings, two classroom cars and a caboose. CSX hazardous material specialists will lead training sessions with specific instruction on how crude oil is shipped. The train and instruction will help strengthen CSX's partnership with first responders and provide a higher state of emergency readiness.

Increased emergency response training and tuition assistance are part of a voluntary agreement that the nation's railroads reached with the U.S. Department of Transportation earlier this year. As part of this comprehensive agreement, the nation's railroads have lowered maximum authorized speeds for certain trains carrying crude oil in designated cities, increased track inspections on key oil routes, and agreed to implement additional trackside safety technology.

The CSX Safety Train is just one of a number of continuing programs through which CSX offers training and recognition to emergency responders and customers. Just recently, CSX presented its Chemical Safety Excellence Award to more than 70 shippers who had incident-free records in 2013.

Training already reaches hundreds of first responders through the Safety Train, hands-on sessions at training centers operated by CSX and the Association of American Railroads, classroom training at local fire stations, exercises and table-top drills, and thousands more through web-based and self-study courses. In September 2013, nearly 100 crude oil customers were trained by a CSX team.

Location: Jacksonville, FL

Published: May 26, 2014

Photos

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:
Any source water detection equipment
Where would the equipment be located?:
Up stream of the intake
What would the maintenance plan for the monitoring equipment entail?:
Maintaining chemicals and probes
Describe the proposed sampling plan at the monitoring site:
would need continous monitoring
Describe the proposed procedures for data management and analysis:
Data would stored at the plant thru the scada ssytem

Appendix B - Form D
Proposed Ground Monitoring Worksheet

Describe the type of ground water monitoring network that could be installed, including the design and location:
CONFIDENTIAL
How many monitoring (sentinel) wells would need to be established?:
What is the expected rate of travel of a contaminant through the groundwater system?:
Provide the distance from the contaminant source to the monitoring wells:
What is the distance of the proposed monitoring equipment to the well head?:
What would the maintenance plan for the monitoring equipment entail?:
maintaining the equipment
Describe the proposed sampling plan at the monitoring site:
data would be monitored thru scada system
Describe the proposed procedures for data management and analysis:
tracked thru scada system

APPENDIX C. COMMUNICATION PLAN TEMPLATE

Berkeley County Pswd-Potomac River

PWSID: WV3300218

Authorizing Signature: Jim Ouellet

Contact Phone Number: (304)267-4600

Contact Email Address: jouellet@berkeleywater.org

Plan Developed On: August 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 = **A**nnouncement. 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 = **B**oil 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 = **C**annot 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 = **D**o 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 = **E**mergency. Water cannot be used for any reason.

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:	Jim Ouellet	(304)267-4600	_jouellet@berkeleywater.org
Alternate spokesperson:	Steve Deridder	(304)274-5803	deridder@berkeleywater.org
Designated location to disseminate information to media:	Berkeley County PSWD Board Room		
Method of Contact:	BCPSWD utilizes the radio, newspapers and Television.		

Media Contacts:	Name	Title	Phone Number	Email
	Bill Kohler; The Herald Mail Co.	Editor	(301)733-5131	billk@herald-mail.com
The Journal		(304)263-8931		WRNR
	(304)263-6586		WKMZ	
(304)263-2770		WYII		(304)263-0637
	WEPM 1340		(304)263-8868	

Emergency Service Contacts

	Name	Emergency Phone	Alternative Phone	Email
Police	Sheriff's Office		(304)267-7000	
Fire	Bedington Fire		(304)274-2381	
Ambulance	Berkeley County Ambulance		(304)274-5013	
Hazmat	Berkeley County Emergency		(304)263-1345	
Other				
Other				
Other				

OEHS Readiness Coordinator	Lee Orr	(304)356-4290			
Downstream Water System Contacts	Water System Name	Contact Name	Emergency Phone	Alternate Phone	Email
	Shepherdstown Water Department	Charles "Woody" Coe	(304)876-2394		
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:	CONFIDENTIAL			
Staff Responsible for Keeping Confidential PSSC Information and Releasing to Emergency Responders.				

Emergency Response Information

List Laboratories available to perform sample analysis in case of emergency.	Name	Phone
	cONFIDENTIAL	
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?:		2020

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/

APPENDIX D. SINGLE SOURCE FEASIBILITY

Water Source Alternative:

Did not complete the alternative source study	
Name of Alternative:	CONFIDENTIAL
Brief Description of the Alternative:	CONFIDENTIAL
Feasible?:	
Provide Cost Estimate:	
Would this alternative supply 100% of your needs?:	
Economic Criteria - Operation and Maintenance Costs:	
Economic Criteria - Capital Cost:	
Technical Criteria - Permitting:	
Technical Criteria - Flexibility:	
Technical Criteria - Resilience:	
Technical Criteria - Institutional Requirements:	
Environmental Criteria - Environmental Impacts:	
Environmental Criteria - Aesthetic Impacts:	
Environmental Criteria - Stakeholder Issues:	
Final Score:	

Appendix E. Feasibility Study Narrative

The BCPSWD Potomac River System has multiple sources that eliminate the necessity for the single source analysis. The Potomac River WTP possesses two source types (a groundwater wellfield and a surface water intake) that are independent of one another. BCPSWD Potomac River WTP has an intake on the Potomac River, the capacity of which is higher than average system demand (2.4 MGD). The Potomac River WTP also utilizes three groundwater supply wells located northwest of the intersection of Interstate-81 and Hammonds Mill Road (Route 901), which are capable of providing up to approximately 2 MGD. Finally, the system already has active interconnections with the City of Martinsburg and the BCPSWD Bunker Hill WTP. BCPSWD has a purchase agreement with the City of Martinsburg for up to 1,000,000 gpd. They currently utilize approximately 250,000 gpd of the 1,000,000 gpd agreement, leaving approximately 750,000 gpd for use during emergencies.

In the event that the groundwater supply wells become contaminated (two are in close proximity while the third is significantly further downgradient from the upgradient two wells), BCPSWD can rely on the Potomac River Intake, as well as its interconnections, if deemed necessary. Should the Potomac River Intake become contaminated, as occurred during an October 2015 latex spill, the System would rely upon its three groundwater supply wells, which cannot meet system demands on their own. These three wells can supply approximately 1.6 MGD. To supplement the limited supply, the System can and does increase the amount of water purchased from the City of Martinsburg. Doing so permits them to meet their supply demand for the required 30, 60 and 90 day periods.

The Potomac River WTP utilizes seven storage tanks throughout the distribution system. The combined total treated water storage of the seven tanks is 5.25 MG. At this capacity, the Potomac River WTP has approximately two days of storage. Lotic water bodies (including the Potomac River) oftentimes do not remain contaminated for extended periods (as can groundwater sources) because of high flow rates and associated travel times. The amount of time that an intake would need to remain closed is dependent on Potomac River flow rates, gradient and travel times of potential contaminants sources. Comparatively, groundwater travel times are significantly slower, and such supplies may need to remain offline for longer periods of time when contamination events occur. Because of this, it seems unlikely that the Potomac River Intake would need to remain closed for extended periods up to 30, 60 or even 90 days.

Matrix Document

Does your utility currently monitor raw water (through continuous monitoring or periodic grab samples) at the surface water intake or from a groundwater source on a regular basis?	Yes turbidity, temperature, Manganese, and pH are monitored and recorded on a daily basis prior to treatment.	
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	**Capital**	Three possible scenarios for a proposed early warning monitoring system for the Potomac River Intake are detailed in **Appendix F-6**
	Yearly O & M	See **Appendix F-6** for details.
Do you serve more than 100,000 customers? If so, please describe the methods you use to monitor at the same technical levels utilized by ORSANCO.	No	

Single Source Feasibility Study

If a public water utility's water supply plant is served by a single–source intake for a surface water supply source or a GWUDI source, the submitted SWPP 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 its primary source of supply is detrimentally affected by contamination from a chemical release or spill event, or other reasons (including drought). These alternatives may include a secondary source, raw or treated water storage, interconnection with neighboring systems, or other options identified on a local level. A secondary water supply source should draw water from a substantially different location or water source to best prevent contamination of both sources.

The BCPSWD Potomac River WTP is actively supplied by more than one source. If a contamination event were to impact the Potomac River intake, the system could rely on the three groundwater wells (Wells A, B, and D) and its interconnection with the City of Martinsburg. Should the groundwater wells become contaminated, the utility could rely on the surface water intake and their connection with the City of Martinsburg to supply its customers. The BCPSWD has a purchase agreement with the City of Martinsburg (PWSID #WV3300212) for up to 1 million gallons per day. As a result, completion of the Feasibility Study Matrix spreadsheet was not required for this system; however, a brief narrative is attached **(Appendix E)** which describes the alternatives already in place.

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APPENDIX E. SUPPORTING DOCUMENTATION