Source Water Protection Plan

CHARLES TOWN UTILITY BOARD

PWSID WV3301905

JEFFERSON COUNTY

Charles Town Utility Board

May 6, 2016

Prepared by:

Charles Town Utility Board

and

TERRADON Corporation

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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:

Dave Mills

Print Name of Authorizing Signatory (see instructions):

Charles Town Utility Board Chairman

Title of Authorizing Signatory:

Date of Submission (May 27, 2016):

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Appendices

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
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	Division of Homeland Security and Emergency Management
ZCC	Zone of Critical Concern
ZPC	Zone of Peripheral Concern

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 Charles Town Utility Board 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, Charles Town Utility Board acknowledges that implementing measures to minimize and mitigate contamination can be a relatively economical way to help ensure the safety of the drinking water.

What are the benefits of preparing a Source Water Protection Plan?

- Fulfills 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.

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 Charles Town Utility Board can be found in **Table 1**.

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.

System Information

Charles Town Utility Board 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 Charles Town Utility Board

Administrative office location:	15527 Charles Town Road Charles Town, WV 26414		
Is the system a public utility, according to the Public Service Commission rule?	Yes		
Date of Most Recent Source Water Assessment Report:	July 2004		
Date of Most Recent Source Water Protection Plan:	December 2010 May 2016		
Population served directly:	14,901 (2015 Sanitary Survey page 2) 13,932 (2015 PSC Report page 601)		
Bulk Water Purchaser Systems:	**System Name**	**PWSID Number**	**Population**
	N/A		
Total Population Served by the Utility:	14,901 (2015 Sanitary Survey page 2) 13,932 (2015 PSC Report page 601)		
Does the utility have multiple source water protection areas (SWPAs)?	No		
How many SWPAs does the utility have?	One		

Water Treatment and Storage

As required, Charles Town Utility Board 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 Charles Town Utility Board 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. Charles Town Utility Board Water Treatment Information

Water Treatment Processes **(List All Processes in Order)**	Coagulation, Flocculation, Sedimentation, Filtration, Disinfection (Chlorination), Fluoridation
Current Treatment Capacity (gal/day)	3.0 MGD (Million Gal/Day)
Current Average Production (gal/day)	1.68 MGD (Million Gal/Day)
Maximum Quantity Treated and Produced (gal)	February 23 , 2015: 2.104 MGD
Minimum Quantity Treated and Produced (gal)	May 17, 2015: 1.392 MGD
Average Hours of Operation	16.7 Hours/Day
Maximum Hours of Operation in One Day	18 Hours/Day
Minimum Hours of Operation in One Day	16 hours/Day
Number of Storage Tanks Maintained	Eight Gravity Storage Tanks (Additional tank to be added in 2016)
Total Gallons of Treated Water Storage (gal)	3,080,000 Gallons (Additional 1 million gallons treated water to be added in 2016)
Total Gallons of Raw Water Storage (gal)	None

Table 3. Charles Town Utility Board Surface Water Sources

Intake Name	SDWIS #	Local Name	Describe Intake	Name of Water Source	Date Constructed/ Modified	Frequency of Use (Primary/ Backup/ Emergency)	Activity Status (Active/ Inactive)
Surface (Shenandoah River) IN001	WV3301905	Charles Town Water Treatment Facility	Screened Pipe to Wet Well	Shenandoah River	1989	Primary	Active
Alternate backup	WV3301905	Charles Town Water Treatment Facility	8 inch Trash Pump 1800 gallons per minute Supplemental supply to wet well. Used when leaf debris and frazil ice buildup on the intake structure is a problem	Shenandoah River	Portable	Secondary	Active

Table 4. Charles Town Utility Board Groundwater Sources

Does the utility blend with groundwater?					No				
Well/Spring Name	SDWIS #	Local Name	Date Constructed/ Modified	Completion Report Available (Yes/No)	Well Depth (ft)	Casing Depth (ft)	Grout (Yes/No)	Frequency of Use (Primary/ Backup/ Emergency)	Activity Status (Active/ Inactive)
N/A									

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 warrants 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.

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 by West Virginia Bureau for Public Health 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

Size of WSDA (Square Miles)	3008.553 Square Miles
River Watershed Name (8-digit HUC)	Shenandoah River (Jefferson County, WV) (02070007)
Size of Zone of Critical Concern (Acres)	8,691 (Acres)
Size of Zone of Peripheral Concern (Acres) (Include ZCC area)	22,394 (Acres)
Method of Delineation for Groundwater Sources	N/A
Area of Wellhead Protection Area (Acres)	N/A

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 Charles Town Utility Board 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.

Charles Town Utility Board 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
Jane Arnett	Charles Town Utility Board	Utility Manager	--	--
Darrell Viands	Charles Town Utility Board	Chief Operator	--	--
Barbara Miller	Jefferson County Office of Homeland Security and Emergency Management	Director	--	--
Denise Pouget Ed Hannon	Jefferson County Emergency Services Agency	Director Deputy Director	--	--
Bill Zaleski	Jefferson County Health Department	Sanitarian Supervisor	--	--
Chief	Citizens Fire Department	Chief	--	--
Chief	Independent Fire Department	Chief	--	--
Alana Hartman	WVDEP Division of Water and Waste Management (Nonpoint Section)	Environmental Resources Analyst	--	--
Monica Whyte	WVDHHR-Kearneysville District Office	Representative	--	--
Alan Marchun	WVDHHR-Kearneysville District Office	Representative	--	--
John Cole	RK&K Engineers	Consultant for Charles Town Utilities	--	--
Lew Baker	WV Rural Water Association	FSA Sourcewater Specialist	--	--

Jennifer O'Brien	Eastern Panhandle Regional Planning & Development Council	Assistant Director	--	--
Dave Lillard Autumn Leah Bryson	WV Rivers Coalition	Representative	--	--
Karen Andersen	Friends of the Shenandoah	Representative	--	--
Karen Bencala	Interstate Commission on the Potomac River Basin (ICPRB)	Senior Water Resources Planner	--	--
Date of first protection Team Meeting		May 12, 2016		
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:		Email invitations to attend Protection Team Meeting and follow up phone calls.		

Potential Sources of Significant Contamination

Source water protection plans should provide a complete and comprehensive list of the PSSC contained within the ZCC based upon information obtained from the WVBPH, working in cooperation with the Department of Environmental Protection (WVDEP) and the 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 the 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.

Confidentiality of PSSCs

A list of the PSSCs contained within the ZCC should be included in the source water protection plan. However, the exact location, characteristics and approximate quantities of contaminants shall only be made known to one or more designees of the public water utility and maintained in a confidential manner. 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 Charles Town Utility Board 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.

Local and Regional PSSCs

For the purposes of this source water protection plan, local PSSCs are those that are identified by the water utility and local stakeholders not included in 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.

Charles Town Utility Board 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 Charles Town Utility Board that do not already appear in datasets from the WVBPH can be found in **Table 7**.

Table 7. Locally Identified Potential Sources of Significant Contamination

PSSC Number	Site Name	Site Description	Comments
1	CONFIDENTIAL	Pasture*	Housing development being built behind farm.
2	CONFIDENTIAL	Pasture*	Crop land and pastures with corn and soybeans.
3	CONFIDENTIAL	Pesticide/fertilizer/petroleum storage and Trans.	None
4	CONFIDENTIAL	Animal Feedlots	None
5	CONFIDENTIAL	Animal Feedlots	None
6	CONFIDENTIAL	Animal Feedlots	Fenced out of creek
7	CONFIDENTIAL	Animal Feedlots	None
8	CONFIDENTIAL	Crops, corn, soybean, wheat	None
9	CONFIDENTIAL	Crops, corn, soybean, wheat	None
10	CONFIDENTIAL	Crops, corn, soybean, wheat	None
11	CONFIDENTIAL	Crops, corn, soybean, wheat	Currently fallow
12	CONFIDENTIAL	Crops, corn, soybean, wheat	None
13	CONFIDENTIAL	Crops, corn, soybean, wheat	With pumpkin patch next to roadside vegetable stand.
14	CONFIDENTIAL	Crops, corn, soybean, wheat	Crops, Corn, Soybean, Wheat
15	CONFIDENTIAL	Drainage canals (agricultural)	Barn with no livestock present but stock has access to stream.
16	CONFIDENTIAL	Hardware/lumber/parts stores	Emergency equipment lighting and supply dealer.
17	CONFIDENTIAL	Auto repair shops	None
18	CONFIDENTIAL	Marina/boat docks	Public Boat ramp
19	CONFIDENTIAL	Railroad Tracks and Yards	None
20	CONFIDENTIAL	Railroad Tracks and Yards	None
21	CONFIDENTIAL	Other	Not active. Well head in front yard.
22	CONFIDENTIAL	Other	Open for business. Associated with R-10 and R-11.
23	CONFIDENTIAL	Other	None

PSSC Number	Site Name	Site Description	Comments
24	CONFIDENTIAL	Other	Septic system not active
25	CONFIDENTIAL	Other	Septic system not active
26	CONFIDENTIAL	Other	Septic system not active
27	CONFIDENTIAL	Car dealerships	Small lot with about 30 vehicles
28	CONFIDENTIAL	Wells: abandoned	Wellhead in front yard
29	CONFIDENTIAL	Wells: water supply	Wells: water supply
30	CONFIDENTIAL	Wells: water supply	Wells: water supply
31	CONFIDENTIAL	Wells: water supply	Not shown on figure for security reasons.
32	CONFIDENTIAL	Wells: water supply	Wells: water supply
33	CONFIDENTIAL	Other	Not shown on figure for security reasons.
34	CONFIDENTIAL	Drinking Water Treatment Plants	Not shown on figure for security reasons.
35	CONFIDENTIAL	Residential (single family homes)	Possibly on septic systems. Check at follow-up meeting.
36	CONFIDENTIAL	Residential (single family homes)	Location based on information from utility board manager and chief operator as well as topographic maps and aerial photographs. Not field verified.
37	CONFIDENTIAL	Residential (single family homes)	None
38	CONFIDENTIAL	Residential (single family homes)	None
39	CONFIDENTIAL	Septic Systems (leach field)*	None
40	CONFIDENTIAL	Septic Systems (leach field)*	None
41	CONFIDENTIAL	Septic Systems (leach field)*	None
42	CONFIDENTIAL	Septic Systems (leach field)*	None
Virginia Regulated			
V-43	CONFIDENTIAL	Sewerage Systems	ICIS-NPDES Non-Major
V-44	CONFIDENTIAL	Millwork	Air synthetic minor, state master
V-45	CONFIDENTIAL	Book Printing	Air synthetic minor, criteria and hazardous air pollutant inventory, SQG, state master
V-46	CONFIDENTIAL	Airport	Criteria and Hazardous Air Pollutant Inventory
V-47	CONFIDENTIAL	Elementary and Secondary Schools	Air minor, state master

PSSC Number	Site Name	Site Description	Comments
V-48	CONFIDENTIAL	Asphalt paving mixtures and blocks, crushed and broken limestone, lime	Air synthetic minor, state master
V-49	CONFIDENTIAL	None	Unspecified universe
V-50	CONFIDENTIAL	Automotive Body Repair	CESQG
V-51	CONFIDENTIAL	Wood household furniture, except upholstered	Air minor, state master
V-52	CONFIDENTIAL	Water supply	ICIS-NPDES Non-Major
V-53	CONFIDENTIAL	Wood household furniture, except upholstered, wood kitchen cabinets	Air Minor, SQG, State Master, Tri Reporter
V-54	CONFIDENTIAL	Dimension stone	Air Minor
V-55	CONFIDENTIAL	Plastics products, not elsewhere classified	Air Synthetic Minor
V-56	CONFIDENTIAL	Elementary and Secondary Schools	Air Minor, Compliance Activity, State Master
V-57	CONFIDENTIAL	Air conditioning repair; commercial and home heating fuel services	SPCC
V-58	CONFIDENTIAL	Air conditioning repair; commercial and home heating fuel services	Tri reporter
V-59	CONFIDENTIAL	None	Criteria and hazardous air pollutant inventory
V-60	CONFIDENTIAL	Wood containers, not elsewhere classified	Air minor, state master
West Virginia Regulated			
EPA NPDES			
R1	CONFIDENTIAL	Land/Farm/Field	Permit Type: Sewage Sub-description: Sludge/Septic Land Disposal (GP)
R2	CONFIDENTIAL	Injection Point	Permit Type: UIC Sewage Sub-description: 5W32 - Septic Systems (Drain Field Disposal Method)
R3	CONFIDENTIAL	Land/Farm/Field	Permit Type: Sewage Sub-description: Sludge/Septic Land Disposal (GP)
R4	CONFIDENTIAL	Injection Point	Permit Type: UIC Sewage

PSSC Number	Site Name	Site Description	Comments
			Sub-description: 5W32 - Septic Systems (Drain Field Disposal Method)
R5	CONFIDENTIAL	Injection Point	Permit Type: UIC Sewage Sub-description: 5W32 - Septic Systems (Drain Field Disposal MEthod)
R6	CONFIDENTIAL	Outlet	Permit Type: Industrial Sub-description: Pesticide
R7	CONFIDENTIAL	Injection Point	Permit Type: UIC Industrial Sub-description: Industrial Process Water and Waste Disposal Wells
R8	CONFIDENTIAL	Injection Point	Permit Type: UIC Sewage Sub-description: 5W32 - Septic Systems (Drain Field Disposal Method)
R9	CONFIDENTIAL	Land/Farm/Field	Permit Type: Sewage Sub-description: Sludge/Septic Land Disposal (GP)
EPA RCRA Superfund			
R10	CONFIDENTIAL	Enforcement/Compliance	Site Type: Stationary
R11	CONFIDENTIAL	Unspecified Universe (N)	Site Type: Stationary
R12	CONFIDENTIAL	ICIP-NPDES Non-Major	Site Type: Stationary
R13	CONFIDENTIAL	Dry Cleaning and Laundry Services	Site Type: Stationary
R14	CONFIDENTIAL	Wireless Telecommunications Carriers (Except Satellite), ICIS Air	Site Type: Stationary
R15	CONFIDENTIAL	ICIS-NPDES-Non-Major	Site Type: Stationary

PSSC Number	Site Name	Site Description	Comments
R16	CONFIDENTIAL	ICIS-NPDES-Non-Major	Site Type: Stationary
R17	CONFIDENTIAL	ICIS-NPDES-Non-Major	Site Type: Stationary
R18	CONFIDENTIAL	ICIS-NPDES-Non-Major	Site Type: Stationary
R19	CONFIDENTIAL	ICIS-NPDES-Non-Major Clean Water Act: Minor, Permit Terminated	Site Type: Stationary
R20	CONFIDENTIAL	ICIS-NPDES-Non-Major Clean Water Act: Minor, Permit Terminated	Site Type: Stationary
R21	CONFIDENTIAL	Crop Farming, Unspecified Universe	Site Type: Stationary
R22	CONFIDENTIAL	ICIS-NPDES-Non-Major Clean Water Act: Minor, Permit Terminated	Site Type: Stationary
R23	CONFIDENTIAL	No Environmental Interest Reported by Federal Programs for this Facility	Site Type: Stationary
R24	CONFIDENTIAL	ICIS-NPDES-Non-Major Clean Water Act: Minor, Permit Terminated	Site Type: Stationary
R25	CONFIDENTIAL	Handler, Unspecified Universe	Site Type: Stationary
R26	CONFIDENTIAL	ICIS-NPDES-Non-Major Clean Water Act: Minor, Permit Terminated	Site Type: Stationary
R27	CONFIDENTIAL	ICIS-NPDES-Non-Major Clean Water Act: Minor, Permit Terminated	Site Type: Stationary
Above Ground Storage Tanks			
R28	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
R29	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

PSSC Number	Site Name	Site Description	Comments
R30	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
R31	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
R32	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
R33	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
R34	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Prioritization of Potential 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, LEPCs, and other agencies or organizations to protect the source water from contamination.

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 PSSC(s) which would require immediate response to address a potential incident that could impact the source water.

A list of priority PSSCs was selected and ranked by the Charles Town Utility Board 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.

Implementation Plan for Management Strategies

Charles Town Utility Board 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. Charles Town Utility Board has developed an implementation plan for priority concerns **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
Agricultural Land Uses	1	Pesticides, herbicides, and nutrients used for farm operations can migrate through surface waters into the water supply. Nonpoint source runoff from the livestock areas may introduce pathogens, particularly if the runoff occurs from confined spaces, such as feedlots. Overgrazing can create erosion issues. Areas used for disposal of animal waste or burying dead livestock can also cause contamination of the source water.
Industrial & Commercial Activity	2	Facilities such as gas stations, auto repair shops, and dry cleaners are located within the SWPA and pose a threat due to the potential for accidental spills, leaks, improper disposal of hazardous waste or improperly managed storm water runoff.
Boat Ramp	3	The WV Division of Natural Resources (WVDNR) Shannondale Springs Wildlife Management Area (WMA) has a boat ramp within the ZCC on a tributary upstream of the intake. Petroleum products from boats may contaminate the surface waters.
Railroad Traffic	4	The railroad tracks run through the protection watershed and cross 2 tributaries within the ZCC. A spill or leak could contaminate the source water.
On-Site Septic Systems	5	Failing septic systems or untreated sewage from on-site septic systems could infiltrate to the surface water source, raising concentrations of total coliform, particularly fecal coliform.
New Development Construction	6	Construction runoff from new development can increase turbidity, total dissolved solids, and total suspended solids in the surface waters. Petroleum products from construction equipment could migrate into surface waters should a spill or leak occur.

Table 9. Priority PSSC Management Strategies

Priority #	PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status/Schedule	Comments	Estimated Cost
1	Agricultural Land Uses	Work with the County Extension Service, the Soil and Water Conservation District, and/or the Natural Resource Conservation Service to raise awareness about and promote participation in forest conservation, land retirement and nutrient management programs within the SWPA.	Charles Town Utility Board	Ongoing	---	Personnel Time
2	Industrial & Commercial Activity	Charles Town will request Groundwater Protection Plans (GPPs) and/or stormwater management plans from WVDEP for commercial facilities located within the SWPA. Review and 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.	Charles Town Utility Board	Ongoing	---	Personnel Time
3	Boat Ramp	Contact personnel of the WVDNR Shannondale Springs WMA to identify any measures that the water system can assist to promote keeping the water free of petroleum products associated with boats.	Charles Town Utility Board	Within 1 year	---	Personnel Time
4	Railroad Traffic	Jefferson County OHSEM will work with LEPC and other local emergency responders to	Charles Town	Ongoing	---	Personnel Time

		utilize the training materials provided by CSX railways (i.e., planning guides and in-person/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. Emergency personnel have also expressed interest in performing routine Emergency Response drills for Highway and Railroad spills. Charles Town Utilities will work with WV DEP or BPH to perform a Hazmat Re-route request to prevent specific potential contaminants from being transported through system source water protection areas. These entities, along with OHSEM, will work with railroad companies to discuss safety measures, emergency plans and inspection routine(s).	Utility Board Jefferson County Office of Homeland Security and Emergency Management WVDEP WVBPH			
5	On-Site Septic Systems	Charles Town Utilities 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). Outreach materials will encourage them to have their septic system inspected regularly and pumped every 5-10 years as needed. Also, the USEPA provides a complete guide for residents to maintain their septic systems, for the guide, visit: http://epa.gov/owm/septic/pubs/homeowner	Charles Town Utility Board, Jefferson County Health Department, WVDEP-DWWM	Ongoing	---	Personnel Time

		_guide_long.pdf				
6	New Development Construction	Ensure sediment and erosion control measures are being instituted at construction sites. Monitor compliance with existing regulations through inspections and/or contact with regulatory agencies (WVDEP).	Charles Town Utility Board	Ongoing	---	Personnel Time
	Previous Plan Status	There were five management strategies recommended in the 2010 Source Water Protection Plan. These five strategies are ongoing and continue to be a concern. These are incorporated in this plan update.	Charles Town Utilities has installed chain link with barbwire fencing around all of their water storage tanks. Additionally, permanent emergency generators have been installed at the water intake, water treatment plant and two booster stations. Continued capital improvements are ongoing, the most significant is replacement of old water lines and installation of a new 1 million gallon finished water storage tank at the treatment plant.			

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. Charles Town Utility Board 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
General Information Dissemination	Include educational information on the following topics on website for public use: source water protection, water conservation, household hazardous materials disposal, pharmaceuticals disposal, observing and reporting spills/leaks.	Charles Town Utilities	Short Term (1-2 years)	Annual CCR information
Best Management Practices (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.	WVDEP and WVDHHR Charles Town Utilities	Short Term (1-2 years)	Charles Town can make this information available via web links on their web page
Clean Up Events	Coordinate with local Clean Up efforts and publicize projects. Work closely with Watershed Associations in this regard.	Charles Town Utilities	Mid Term (2-4 years)	Coordinate with local organizations and publish information on web page
School Curricula	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). Consider implementing in conjunction with City and County MS4 requirements.	WVDEP/WVDHHR Charles Town Utilities	Long Term (5+ years)	
Display Information	(1) Include informational materials (i.e., brochures, maps, etc.) in County & City government offices and other public places (i.e., local fairs). Work with DOT	Charles Town Utilities	Short Term	Charles Town will host a public version of the

	for protection area sign expansion/coverage. (2) Host non-confidential SWPP online for public review and comment.		(1 year)	SWPP online
Emergency Planning and Coordination	Participate with local fire departments and County Emergency Services on a regular basis. This will ensure that all the agencies are in constant communication with one another and prepared in the event of an emergency.	Jefferson County Office of Homeland Security and Emergency Management Citizens and Independent Fire Departments Charles Town Utilities	Short Term and continual on-going training (1-2 years)	On-going training exercises by emergency services
Jefferson County Water Advisory Committee Participation	A representative from Charles Town Utilities will participate in the Jefferson County Water Advisory Committee. County cleanup days, outreach, Shepherdstown day, 7 watershed groups coordinated,	Charles Town Utilities	Short Term and ongoing there after (1-2 years)	The Jefferson County Water Advisory Committee meets the 3rd Wednesday of each month at the County Commission meeting room located at 200 E. Washington Street, Charles Town, WV.

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. 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 from 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 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.

Treated water storage capacity in the event of such an emergency also becomes extremely important. Storage capacity can directly determine how well 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 Charles Town Utility Board is provided in **Table 11**.

Response Networks and Communication

Statewide initiatives for emergency response, including source water related incidents, are being developed. These include the West Virginia Water/Wastewater Agency Response Network (WV WARN, see http://www.wvwarn.org/) and the Rural Water Association Emergency Response Team (see http://www.wvrwa.org/). Charles Town Utility Board has analyzed its ability to effectively respond to emergencies and this information is provided in **Table 11**.

Table 11. Charles Town Utility Board Water Shortage Response Capability

Can the utility isolate or divert contamination from the intake or groundwater supply?	Yes, isolation by electronically closing the drop gate of the intake to the wet well.
Describe the utility's capability to isolate or divert potential contaminants:	CONFIDENTIAL
Can the utility switch to an alternative water source	Potentially

or intake that can supply full capacity at any time?	
Describe in detail the utility's capability to switch to an alternative source:	CONFIDENTIAL
Can the utility close the water intake to prevent contamination from entering the water supply?	CONFIDENTIAL
How long can the intake stay closed?	CONFIDENTIAL
Describe the process to close the intake:	CONFIDENTIAL
Describe the treated water storage capacity of the water system:	8 storage tanks for a total storage of 3.080 Million gallons. NOTE the system plans on adding an additional 1.0 Million gallons of finished water storage at the treatment plant.
Route 9 Storage Tank **(installed 1998, Repainted 2015)**	500,000 gallons
Keys Ferry Storage Tank **(installed 1988, Repainted 2010)**	500,000 gallons
Avis Street Storage Tank **(installed 1976, Repainted 2015**	500,000 gallons
6th Avenue Storage Tanks **Standpipe** **(installed 2002)** **Elevated Tank** **(installed 1991, repaint scheduled 2016)**	337,000 gallons 125,000 gallons
Northern High Zone Standpipe **(installed 2006)**	360,000 gallons
Huntfield Storage Tank **(installed 2002)**	258,000 gallons
Locust Hill Storage Tank **(installed 2003)**	500,000 gallons
Anticipated 1M gallon additional storage at the Water Treatment Plant in 2016	1 Million gallons (anticipated in 2016)

Is the utility a member of WVRWA Emergency Response Team?	No
Is the utility a member of WV-WARN?	Yes
List any other mutual aid agreements to provide or receive assistance in the event of an emergency:	N/A

Operation During Loss of Power

This utility analyzed and examined 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 shown in **Table 12**.

Table 12. Generator Capacity

What is the type and capacity of the generator needed to operate during a loss of power?	CONFIDENTIAL			
Can the utility connect to generator at intake/wellhead? If yes, select a scenario that best describes system.	Yes, CONFIDENTIAL.			
Can the utility connect to generator at treatment facility? If yes, select a scenario that best describes system.	Yes, CONFIDENTIAL.			
Can the utility connect to a generator in distribution system? If yes, select a scenario that best describes system.	Yes, CONFIDENTIAL.			
Does the utility have adequate fuel on hand for the generator?	Yes, CONFIDENTIAL.			
What is your on-hand fuel storage and how long will it last operating at full capacity?	**Gallons Diesel** CONFIDENTIAL		**Hours** CONFIDENTIAL	
Provide a list of suppliers that could provide generators and fuel in the event of an emergency:	**Supplier**		**Contact Name**	**Phone Number**
	Generator	WV National Guard	Garrison Commander	CONFIDENTIAL
	Fuel	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	Fuel	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Cummins Service Contractor	Cummins Atlantic	CONFIDENTIAL	CONFIDENTIAL
Does the utility test the generator(s) periodically?	Yes, they exercise the generators on a weekly basis		
Does the utility routinely maintain the generator?	Yes, a yearly service contract with Cummins.		
If no scenario describing the ability to connect to generator matches the utility's system or if utility does not have ability to connect to a generator, describe plans to respond to power outages:	CONFIDENTIAL		

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. Charles Town Utility Board 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 Charles Town Utility Board

Is the utility able to meet water demands with the current production capacity over the next 5 years? If so, explain how you plan to do so.	Yes, there is enough capacity to support more residential, commercial and industrial development within the service area.
If not, describe the circumstances and plans to increase production capacity:	Although the Utility is capable of meeting future demands, the utility is continuing with planned capital improvements of approximately $9,000,000. The improvements consist of installing 11,000 LF of 12" pipe for the Keys Ferry Loop, replacement of 9,000 LF of 2"-8" pipe in Jefferson Avenue servcie area, tank repainting, new tank telemetry and system wide SCADA and improvements to the treatment plant inclcudind increasing the sediment basins and additng 1 M gallons of additional clearwell storage.

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 same method used 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 uses such as by the fire departments for fires or training, un-metered bulk sells, flushing to maintain the distribution system, backwashing filters, and cleaning settling basins. By totaling the 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 14** is taken from the most recently submitted Charles Town Utility Board PSC Annual Report.

Table 14. Water Loss Information

Total Water Pumped (gal)		596,936,000
Total Water Purchased (gal)		None
Total Water Pumped and Purchased (gal)		596,936,000
Water Loss Accounted for Except Main Leaks (gal)	**Mains, Plants, Filters, Flushing, etc.**	14,500,000
	Fire Department	7,500,000
	Known Main Breaks & Repaired	6,500,000
	Back Washing	0
	Blowing Settling Basins	10,500,000
Total Water Loss Accounted For Except Main Leaks		32,500,000
Water Sold- Total Gallons (gal)		370,148,000
Unaccounted For Lost Water (gal)		187,788,000
Water lost from main leaks (gal)		6,5000,000
Total gallons of Unaccounted for Lost Water and Water Lost from Main Leaks (gal)		194,288,000

Total Percent Unaccounted For Water and Water Lost from Main Leaks (gal)	31.46%
If total percentage of Unaccounted for Water is greater than 15%, please describe any measures that could be taken to correct this problem:	The Utility is currently conducting capital improvements of approximately $9 M. These improvements include: installation of 11,000 LF 12" pipe for the Keys Ferry Loop; Replace 9,000 LF of 2"-8" pipe in the Jefferson Avenue Service area. These projects should help to reduce the unaccounted for water by the system and also increase the amount of storage time by decreasing the usage per day.

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 in order to establish what condition is indicative of a contamination event. Continuous monitoring will provide results for a predetermined set of parameters. The more parameters being monitored, the more sophisticated the monitoring equipment will 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 for 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. Having 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.

Charles Town Utility Board 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 can be found 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? If yes, from whom do you receive notices?			Yes, notifications are received from the WVDEP, WVDHHR and the WV Office of Homeland Security and Emergency Management. In addition the state of Virginia provides notifications as well as the Interstate Commission on the Potomac River Basin (ICPRB).
Are you aware of any facilities, land uses, or critical areas within your protection areas where chemical contaminants could be released or spilled?			Agricultural land use and areas around Front Royal, Virginia.
Are you prepared to detect potential contaminants if notified of a spill?			CONFIDENTIAL
List laboratories (and contact information) on whom you would rely to analyze water samples in case of a reported spill.	**Laboratories**		
	Name	**Contact**	
	CONFIDENTIAL	CONFIDENTIAL	
	CONFIDENTIAL	CONFIDENTIAL	
Do you have an understanding of baseline or normal conditions for your source water quality that accounts for seasonal fluctuations?			Yes, CONFIDENTIAL
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, CONFIDENTIAL
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	**Capital**		CONFIDENTIAL
	Yearly O & M		CONFIDENTIAL
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
Note: Complete appropriate Early Warning Monitoring form for your system in Appendix B.			

Single Source Feasibility Study

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

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

Communication Plan

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

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

The WVBPH has developed a recommended communication plan template that provides a tiered incident communication process to provide a universal system of alert levels to utilities and water system managers. The comprehensive Communication Plan for Charles Town Utility Board 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.

Emergency Response Short Form

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 Communications Plan by providing quick access to important information about emergency response and is to be used for internal review and planning purposes only.

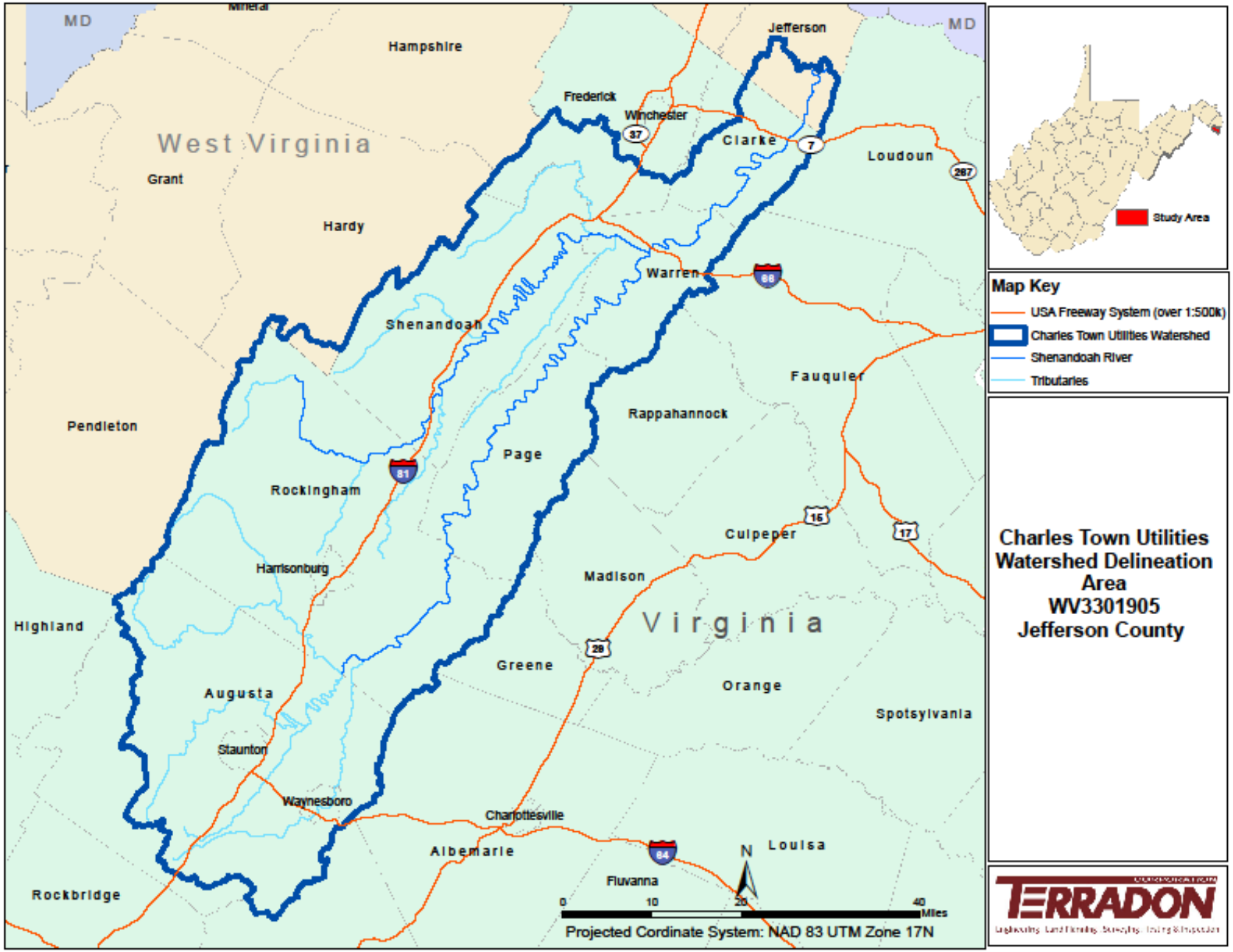
Conclusion

This report represents a detailed explanation of the required elements of Charles Town Utility Board'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**.

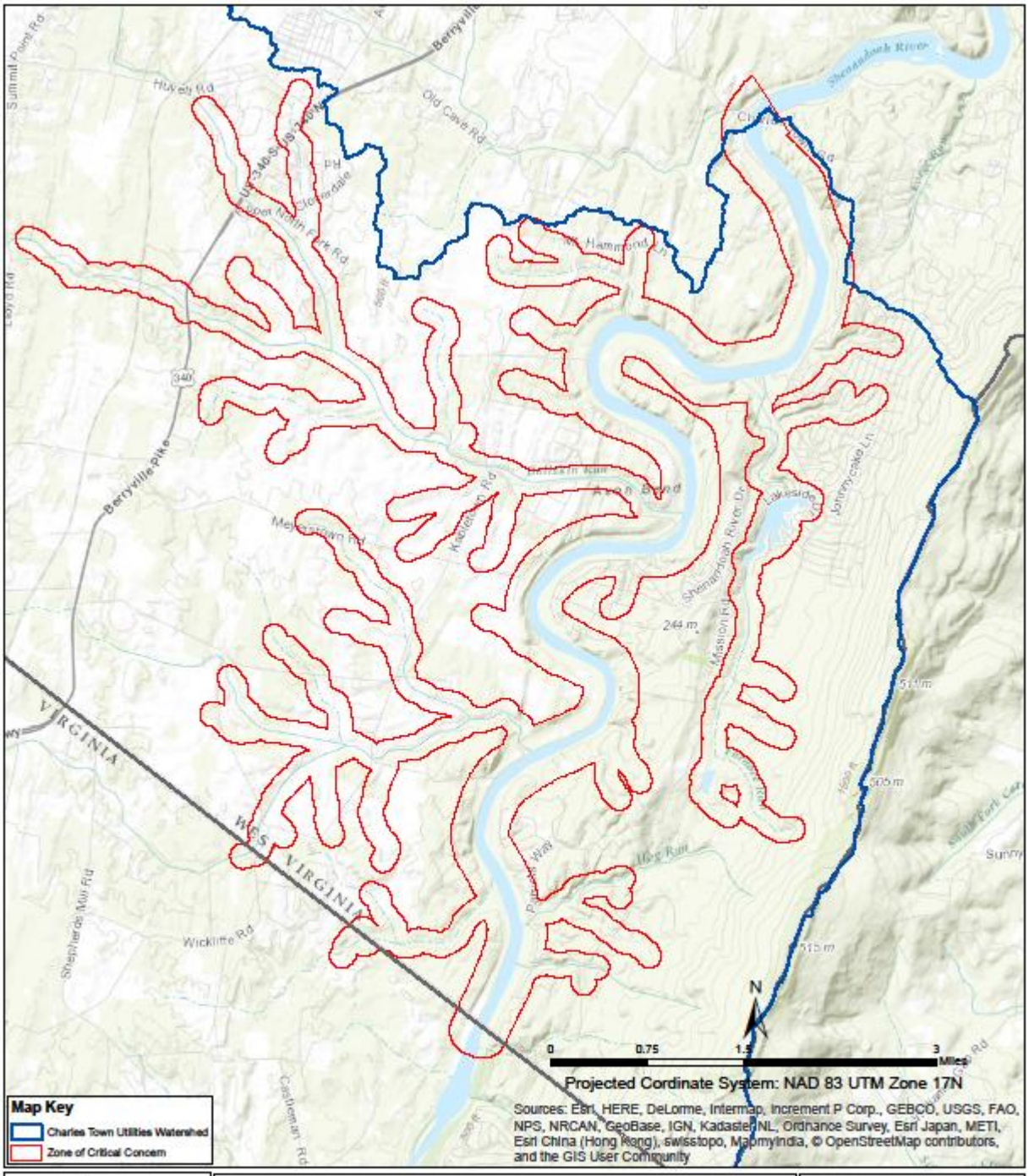
This source water protection plan is intended to help prepare community public water systems all over West Virginia to properly handle any emergencies that might compromise the quality of the system's source water supply. It is imperative that this plan is updated as often as necessary to reflect the 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

Watershed Delineation Area (WSDA Map)


MD
Mineral
Hampshire
Jefferson
MD
Frederick
Winchester
West Virginia
Clarke
Loudoun
Grant
Hardy
Warren
Shenandoah
Fauquier
Rappahannock
Pendleton
Page
Rockingham
Culpeper
Harrisonburg
Madison
Highland
Virginia
Greene
Orange
Augusta
Spotsylvania
Staunton
Waynesboro
Charlottesville
Albemarle
Louisa
Fluvanna
Rockbridge
N
0
10
20
40
Miles
Projected Cordinate System: NAD 83 UTM Zone 17N
Study Area
Map Key
USA Freeway System (over 1:500k)
Charles Town Utilities Watershed
Shenandoah River
Tributaries
Charles Town Utilities
Watershed Delineation
Area
WV3301905
Jefferson County
TERRADON

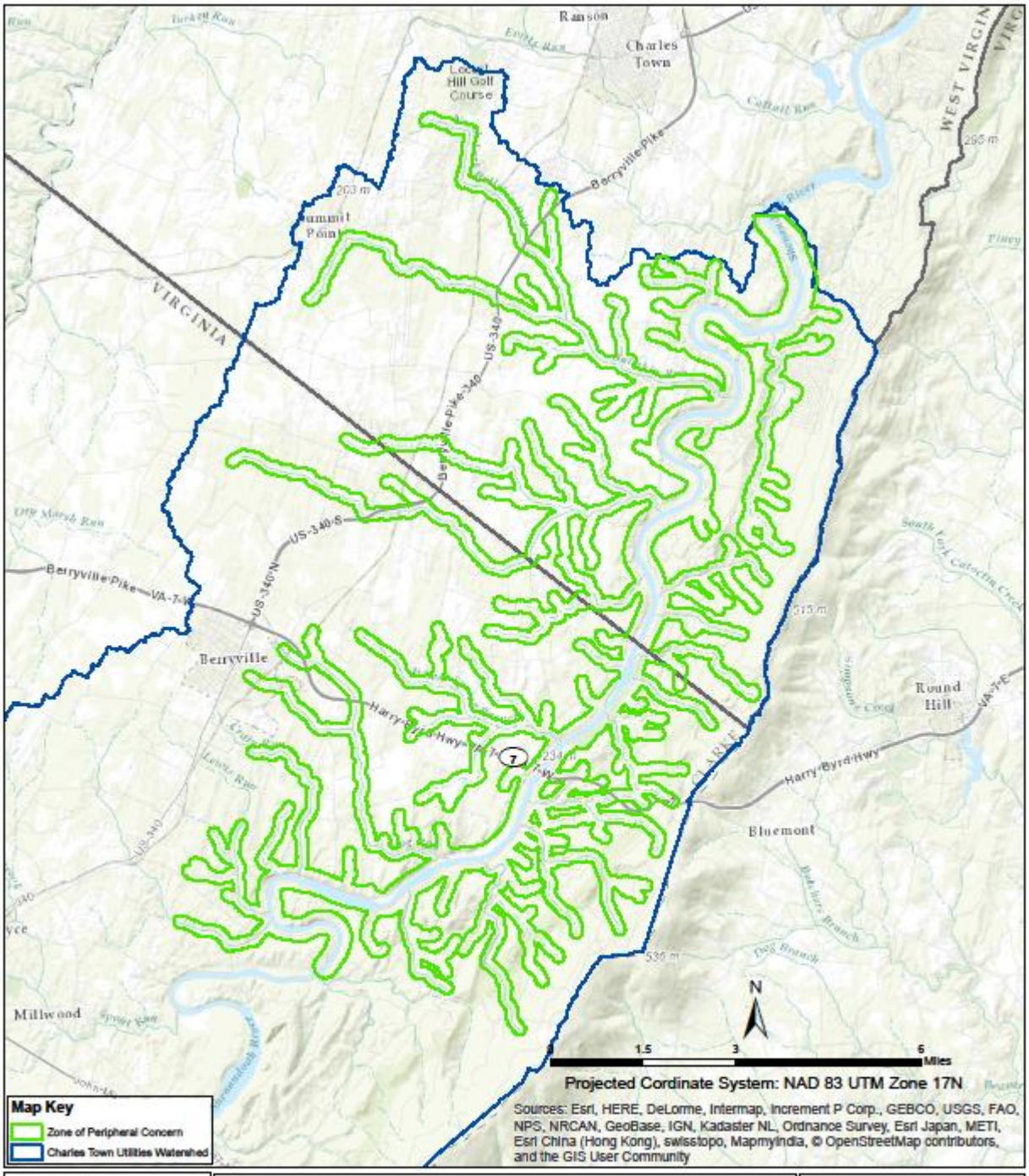
Zone of Critical Concern (ZCC) and Zone of Peripheral Concern (ZPC) Map(s)



Charles Town Utilities Zone of Critical Concern

WV3301905

Jefferson County



Charles Town Utilities Zone of Peripheral Concern

WV3301905

Jefferson County

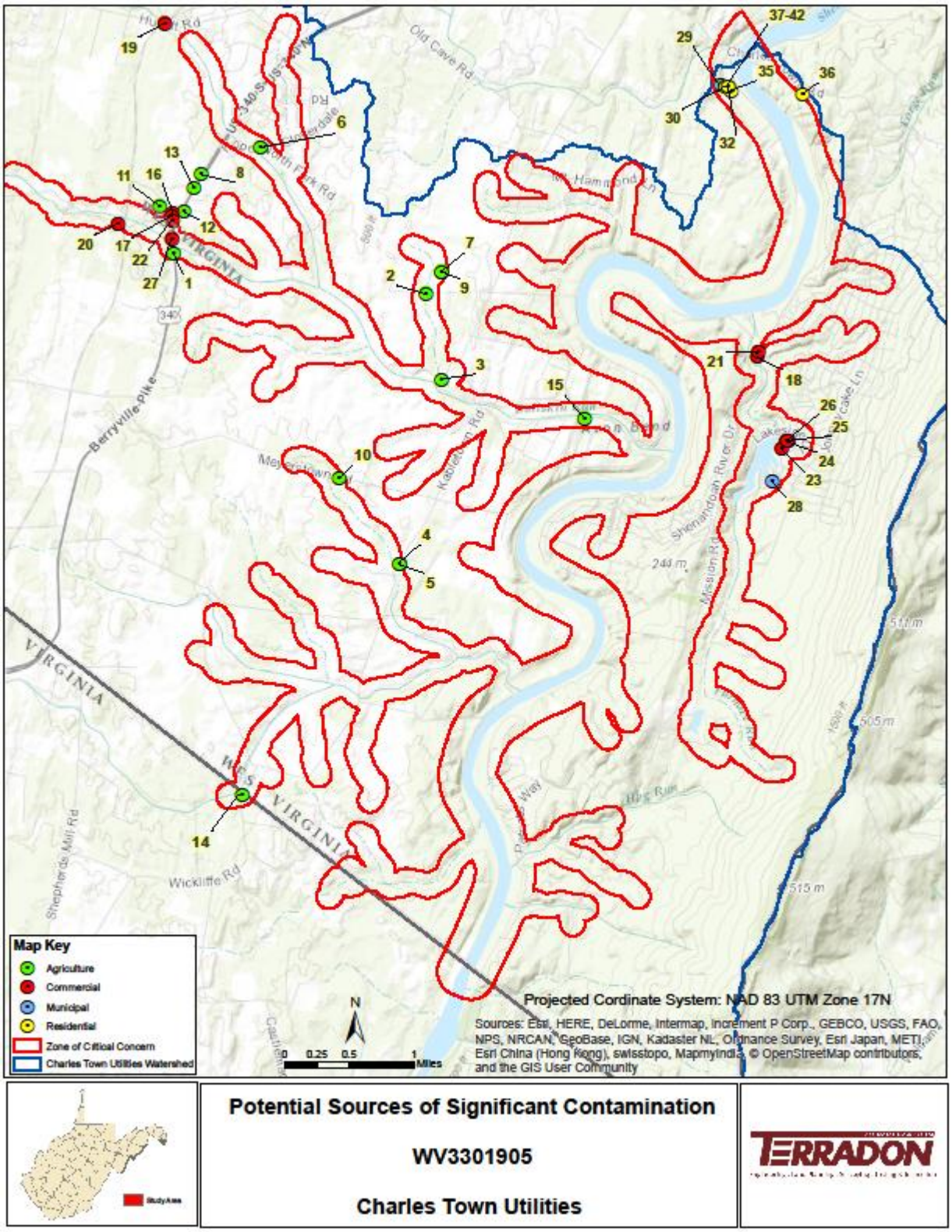
TERRADON

List of Locally Identified PSSCs

PSSC Number	SITE NAME	Site Description	MAPCODE	SOURCE CATEGORY	ASSOCIATED CHEMICALS	THREAT TO GW	THREAT TO SW
1	CONFIDENTIAL	Pasture*	A-18	Agriculture	MP, SOC	L	L
2	CONFIDENTIAL	Pasture*	A-18	Agriculture	MP, SOC	L	L
3	CONFIDENTIAL	Pesticide/fertilizer/ petroleum storage and Trans.	A-19	Agriculture	PH, NN, SOC, VOC	L	L
4	CONFIDENTIAL	Animal Feedlots	A-2	Agriculture	NN, MP, TO	H	H
5	CONFIDENTIAL	Animal Feedlots	A-2	Agriculture	NN, MP, TO	H	H
6	CONFIDENTIAL	Animal Feedlots	A-2	Agriculture	NN, MP, TO	H	H
7	CONFIDENTIAL	Animal Feedlots	A-2	Agriculture	NN, MP, TO	H	H
8	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
9	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
10	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
11	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
12	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
13	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
14	CONFIDENTIAL	Crops, corn, soybean, wheat	A-5	Agriculture	NN, SOC, MP	L	L
15	CONFIDENTIAL	Drainage canals (agricultural)	A-8	Agriculture	T	L	L
16	CONFIDENTIAL	Hardware/lumber/ parts stores	C-21	Commercial	VOV, SOC, HM, M	L	L
17	CONFIDENTIAL	Auto repair shops	C-3	Commercial	PH, M, VOC, HM, SOC	H	M
18	CONFIDENTIAL	Marina/boat docks	C-30	Commercial	PH	L	H
19	CONFIDENTIAL	Railroad Tracks and Yards	C-41	Commercial	PH, M, VOC, SOC	H	H
20	CONFIDENTIAL	Railroad Tracks and Yards	C-41	Commercial	PH, M, VOC, SOC	H	H
21	CONFIDENTIAL	Other	C-53	Commercial	NULL	NULL	NULL
22	CONFIDENTIAL	Other	C-53	Commercial	NULL	NULL	NULL

23	CONFIDENTIAL	Other	C-53	Commercial	NULL	NULL	NULL
24	CONFIDENTIAL	Other	C-53	Commercial	NULL	NULL	NULL
25	CONFIDENTIAL	Other	C-53	Commercial	NULL	NULL	NULL
26	CONFIDENTIAL	Other	C-53	Commercial	NULL	NULL	NULL
27	CONFIDENTIAL	Car dealerships	C-7	Commercial	PH, VOC	H	L
28	CONFIDENTIAL	Wells: abandoned	M-30	Municipal	VOC, SOC, MP, PH, NN	H	L
29	CONFIDENTIAL	Wells: water supply	M-31	Municipal	VOC, SOC	L	L
30	CONFIDENTIAL	Wells: water supply	M-31	Municipal	VOC, SOC	L	L
31	CONFIDENTIAL	Wells: water supply Not on map due to security reasons.	M-31	Municipal	VOC, SOC	L	L
32	CONFIDENTIAL	Wells: water supply	M-31	Municipal	VOC, SOC	L	L
33	CONFIDENTIAL	Other. Not on map due to security reasons.	M-32	Municipal	NULL	NULL	NULL
34	CONFIDENTIAL	Drinking Water Treatment Plants. Not on map due to security reasons.	M-5	Municipal	D	L	L
35	CONFIDENTIAL	Residential (single family homes)	R-4	Residential	VOC, SOC, NN	H	H
36	CONFIDENTIAL	Residential (single family homes)	R-4	Residential	VOC, SOC, NN	H	H
37	CONFIDENTIAL	Residential (single family homes)	R-4	Residential	VOC, SOC, NN	H	H
38	CONFIDENTIAL	Residential (single family homes)	R-4	Residential	VOC, SOC, NN	H	H
39	CONFIDENTIAL	Septic Systems (leach field)*	R-6	Residential	MP, VOC, SOC, TO, NN	M	M
40	CONFIDENTIAL	Septic Systems (leach field)*	R-6	Residential	MP, VOC, SOC, TO, NN	M	M
41	CONFIDENTIAL	Septic Systems (leach field)*	R-6	Residential	MP, VOC, SOC, TO, NN	M	M
42	CONFIDENTIAL	Septic Systems (leach field)*	R-6	Residential	MP, VOC, SOC, TO, NN	M	M

Map of Locally Identified PSSCs- PSSC 31, 33, and 34 not depicted due to security reason.



List of Regulated PSSCs

WEST VIRGINIA - EPA NPDES							
PSSC Number	**Permit ID**	**Facility Name**	**Description**	**T C Description**	**Permit Type**	**IUT Description**	**RP Name**
R1	CONFIDENTIAL	CONFIDENTIAL	Sludge/Septic Land Disposal (GP)	Renewed	Sewage	Land/Farm/ Field	CONFIDENTIAL
R2	CONFIDENTIAL	CONFIDENTIAL	5W32 - Septic Systems(Drain Field Disposal Mthd)	Renewed	UIC Sewage	Injection Point	CONFIDENTIAL
R3	CONFIDENTIAL	CONFIDENTIAL	Sludge/Septic Land Disposal (GP)	Renewed	Sewage	Land/Farm/ Field	CONFIDENTIAL
R4	CONFIDENTIAL	CONFIDENTIAL	5W32 - Septic Systems(Drain Field Disposal Mthd)	Renewed	UIC Sewage	Injection Point	CONFIDENTIAL
R5	CONFIDENTIAL	CONFIDENTIAL	5W32 - Septic Systems(Drain Field Disposal Mthd)	New	UIC Sewage	Injection Point	CONFIDENTIAL
R6	CONFIDENTIAL	CONFIDENTIAL	Pesticide	New	Industrial	Outlet	CONFIDENTIAL
R7	CONFIDENTIAL	CONFIDENTIAL	5W20 - Ind Process Water and Waste Disposal Wells	Renewed	UIC Industrial	Injection Point	CONFIDENTIAL
R8	CONFIDENTIAL	CONFIDENTIAL	5W32 - Septic Systems(Drain Field Disposal Mthd)	New	UIC Sewage	Injection Point	CONFIDENTIAL
R9	CONFIDENTIAL	CONFIDENTIAL	Sludge/Septic Land Disposal (GP)	Renewed	Sewage	Land/Farm/ Field	CONFIDENTIAL

WEST VIRGINIA - EPA RCRA

PSSC Number	OBJECTID *	OBJECTID	PRIMARY NAME	LOCATION	CITY NAME	FIPS CODE	HUC CODE	EPA REGION	SITE TYPE	CREATE DATE	UPDATE DATE	CONVEYOR	REFERENCE POINT
R10	5	13631	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	2/17/2010	11/4/2013	FRS-GEOCODE	ENTRANCE POINT OF A FACILITY OR STATION
R11	7	13391	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	12/3/2009	<Null>	FRS	ENTRANCE POINT OF A FACILITY OR STATION
R12	8	24410	CONFIDENTIAL	CONFIDENTIAL	SHANNONDALE	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R13	10	4361	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	3/1/2000	1/27/2012	RCRIS	N/A
R14	11	12108	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	1/6/2009	10/25/2011	FRS	ENTRANCE POINT OF A FACILITY OR STATION
R15	12	17501	CONFIDENTIAL	CONFIDENTIAL	SHEPHERDSTOWN	54037	2070007	3	STATIONARY	7/18/2012	8/2/2013	ICIS	N/A
R16	14	24597	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R17	15	20658	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R18	16	23816	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R19	17	23351	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R20	18	24109	CONFIDENTIAL	CONFIDENTIAL	SHANNONDALE	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R21	20	1042	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATION	1/25/2	1/27/20	FRS-	CENTER OF A

		0							ARY	005	12	GEOCODE	FACILITY OR STATION
R22	21	17921	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	10/25/2012	3/5/2013	ICIS	N/A
R23	25	13113	CONFIDENTIAL	CONFIDENTIAL	RANSON	54037	2070007	3	STATIONARY	11/20/2009	<Null>	CWNS	CENTER OF A FACILITY OR STATION
R24	29	19350	CONFIDENTIAL	CONFIDENTIAL	MEYSERSTOWN	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R25	31	790	CONFIDENTIAL	CONFIDENTIAL	HARPERS FERRY	54037	2070007	3	STATIONARY	3/1/2000	1/27/2012	FRS	ENTRANCE POINT OF A FACILITY OR STATION
R26	34	24791	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	2/6/2013	3/5/2013	ICIS	N/A
R27	38	16728	CONFIDENTIAL	CONFIDENTIAL	CHARLES TOWN	54037	2070007	3	STATIONARY	7/18/2012	9/10/2013	ICIS	N/A

WEST VIRGINIA – ABOVE GROUND STORAGE TANKS

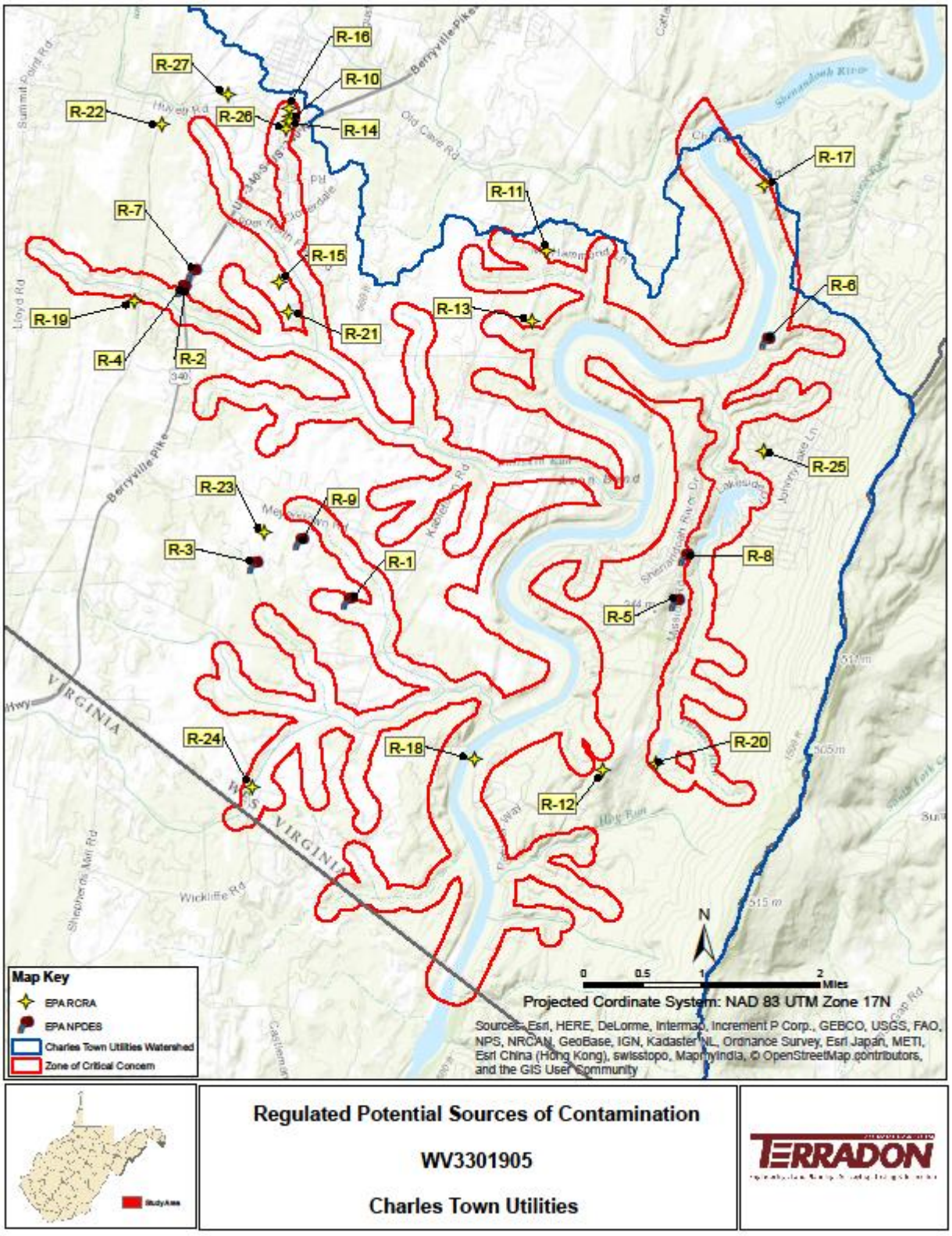
PSSC Number	OBJECTID *	Description	COMMENTS	SPILL_PLAN
R28	1	CONFIDENTIAL Not on map due to security reasons.	CONFIDENTIAL	CONFIDENTIAL
R29	2	CONFIDENTIAL Not on map due to security reasons.	CONFIDENTIAL	CONFIDENTIAL
R30	4	CONFIDENTIAL Not on map due to security reasons.	CONFIDENTIAL	CONFIDENTIAL
R31	6	CONFIDENTIAL Not on map due to security reasons.	CONFIDENTIAL	CONFIDENTIAL
R32	12	CONFIDENTIAL Not on map due to	CONFIDENTIAL	CONFIDENTIAL

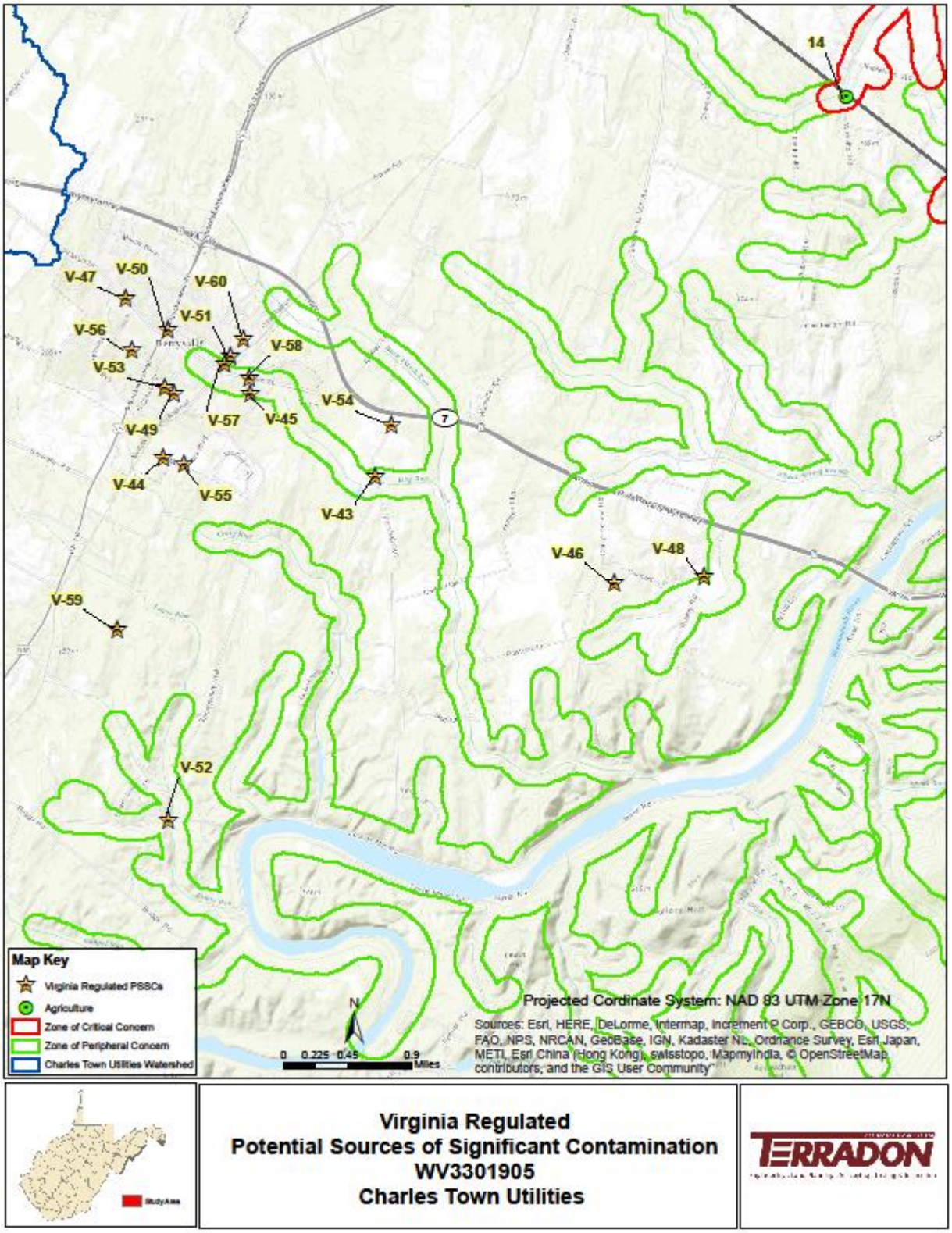
		security reasons.		
R33	13	CONFIDENTIAL Not on map due to security reasons.	CONFIDENTIAL	CONFIDENTIAL
R34	15	CONFIDENTIAL Not on map due to security reasons.	CONFIDENTIAL	CONFIDENTIAL

Virginia Regulated						
PSSC NUMBER	**PRIMARY NAME**	**LOCATION ADDRESS**	**STATE CODE**	**PGM SYSTEM ACRONYMS**	**INTEREST TYPES**	**SIC CODE DESCRIPTIONS**
V43	CONFIDENTIAL	CONFIDENTIAL	VA	NPDES	ICIS-NPDES NON-MAJOR	CONFIDENTIAL
V44	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS	AIR SYNTHETIC MINOR, STATE MASTER	CONFIDENTIAL
V45	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS, EIS, RCRAINFO	AIR SYNTHETIC MINOR, CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY, SQG, STATE MASTER	CONFIDENTIAL
V46	CONFIDENTIAL	CONFIDENTIAL	VA	EIS	CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY	CONFIDENTIAL
V47	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS	AIR MINOR, STATE MASTER	CONFIDENTIAL
V48	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS	AIR SYNTHETIC MINOR, STATE MASTER	CONFIDENTIAL
V49	CONFIDENTIAL	CONFIDENTIAL	VA	RCRAINFO	UNSPECIFIED UNIVERSE	CONFIDENTIAL
V50	CONFIDENTIAL	CONFIDENTIAL	VA	RCRAINFO	CESQG	CONFIDENTIAL
V51	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS	AIR MINOR, STATE MASTER	CONFIDENTIAL
V52	CONFIDENTIAL	CONFIDENTIAL	VA	NPDES	ICIS-NPDES NON-MAJOR	CONFIDENTIAL

V53	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, CEDS, RCRAINFO, TRIS	AIR MINOR, SQG, STATE MASTER, TRI REPORTER	CONFIDENTIAL
V54	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS	AIR MINOR	CONFIDENTIAL
V55	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS	AIR SYNTHETIC MINOR	CONFIDENTIAL
V56	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS, NCDB	AIR MINOR, COMPLIANCE ACTIVITY, STATE MASTER	CONFIDENTIAL
V57	CONFIDENTIAL	CONFIDENTIAL	VA	OIL	SPCC	CONFIDENTIAL
V58	CONFIDENTIAL	CONFIDENTIAL	VA	TRIS	TRI REPORTER	CONFIDENTIAL
V59	CONFIDENTIAL	CONFIDENTIAL	VA	EIS	CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY	CONFIDENTIAL
V60	CONFIDENTIAL	CONFIDENTIAL	VA	AIR, AIRS/AFS, CEDS	AIR MINOR, STATE MASTER	CONFIDENTIAL

Map of Regulated PSSCs





Virginia Regulated
Potential Sources of Significant Contamination
WV3301905
Charles Town Utilities

TERRADON

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 installed for a surface water source

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

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 A

<u>Existing</u> Early Warning Monitoring System Worksheet- Surface Water Source

Describe the type of early warning detection equipment installed.
CONFIDENTIAL
Describe the mechanism used to store data and an institutional framework to analyze and interpret the data.
CONFIDENTIAL
Describe the process used to determine the credibility of a contamination event if a change is detected in the quality of source water.

Appendix B-Form B

<u>Proposed</u> Early Warning Monitoring System Worksheet- Surface

Describe the type of early warning detection equipment that could be installed, including the design.
CONFIDENTIAL
Where would the equipment be located?
CONFIDENTIAL
What would the maintenance plan for the monitoring equipment entail?
CONFIDENTIAL
Describe the proposed sampling plan at the monitoring site.
CONFIDENTIAL
Describe the proposed procedures for data management and analysis.
CONFIDENTIAL

Appendix B-Form C THIS FORM IS NOT APPLICABLE TO Charles Town Utility Board
Existing Early Warning Monitoring System Worksheet- Groundwater Source

Describe the type of early warning detection equipment installed.
N/A
How many monitoring (sentinel) wells are established?
N/A
What is the expected rate of travel of a contaminant through the groundwater system?
N/A
Provide the distance from the contaminant source to the monitoring wells.
N/A
What is the distance of the monitoring equipment to the wellhead?
N/A
Describe the mechanism used to store data and an institutional framework to analyze and interpret the data.
N/A
Describe the process used to determine the credibility of a contamination event if a change is detected in the quality of source water.
N/A

Appendix B-Form D THIS FORM IS NOT APPLICABLE TO Charles Town Utility Board
Proposed Early Warning Monitoring System Worksheet- Groundwater Source

Describe the type of ground water monitoring network that could be installed, including the design and location.
N/A
How many monitoring (sentinel) wells would need to be established?
N/A
What is the expected rate of travel of a contaminant through the groundwater system?
N/A
Provide the distance from the contaminant source to the proposed monitoring wells.
N/A
What is the distance from the proposed monitoring equipment to the wellhead?
N/A
What would the maintenance plan for the monitoring equipment entail?
N/A
Describe the proposed sampling plan at the monitoring site.
N/A
Describe the proposed procedures for data management and analysis.
N/A

Appendix C. Communication Plan

Communication Plan Template

For Charles Town Utility Board

PWSID: WV3301905_____ District: Kearneysville _____

Certified Operator: CONFIDENTIAL _____

Contact Phone Number: CONFIDENTIAL _____

Contact Email Address: _____

Plan Developed On: April 2016_____ Plan Update Due On: _____

ACKNOWLEDGMENTS:

This plan was developed by Charles Town Utility Board with assistance from Sam Wilkes, Senior Environmental Project Manager, TERRADON Corporation 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 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. Example press releases are provided as attachments to this plan.

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	Role
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Team Member Name	Organization	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 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 practice 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
- Agree not to 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 (see example press releases attached)
- 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

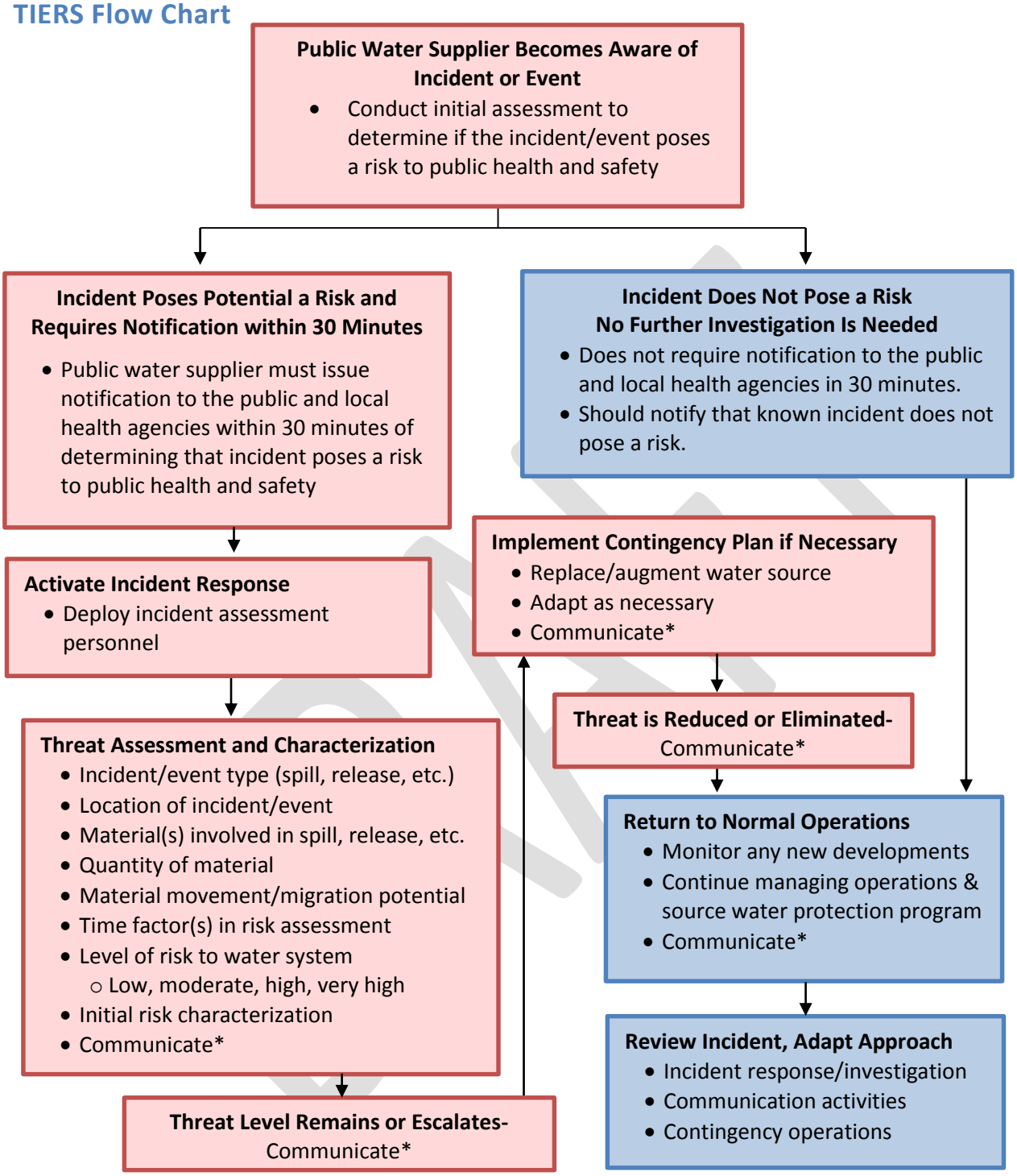
As the flow chart indicates, several iterative cycles will occur after the initial threat assessment, including communication with local agencies and the public, further investigation of the incident, possible implementation of the water system's contingency plan, and eventual elimination of the threat and a return to normal operations. Communication activities during this period will include:

- The initial release (i.e., **A**nnouncement, **B**oil Water, **C**annot Drink, **D**o Not Use, or **E**mergency attached)
    - 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.

TIERS Flow Chart



Communicate*

Constant communication with local agencies, public, and the media is critical throughout the entire process. The initial notification should include all pertinent information, depending on the TIERS level. Regular information updates should be provided. The **A-B-C-D-E** TIERS levels should be updated and explained as necessary.

Press Release Attachments

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

UTILITY ISSUED NOTICE – LEVEL A

PUBLIC WATER SYSTEM ANNOUNCEMENT

A WATER SYSTEM INVESTIGATION IS UNDERWAY

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

The incident involves the following situation at this location:
_____
_____
_____

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

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

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

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL B

BOIL WATER ADVISORY

A BOIL WATER ADVISORY IS IN EFFECT

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

□ Entire Water System or □ Other: _____
_____

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

What should I do?

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

What happened?

- **The problem is related to** _____

What is being done?

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

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

- _____

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

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

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

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL C
"CANNOT DRINK" WATER NOTIFICATION
A LEVEL C WATER ADVISORY IS IN EFFECT

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

□ Entire Water System or □ Other: _____
_____

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

What should I do?

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

What happened?

- **The problem is related to** _____

What is being done?

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

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

- _____

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

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

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL D
"DO NOT USE" WATER NOTIFICATION
A LEVEL D WATER ADVISORY IS IN EFFECT

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

□ Entire Water System or □ Other: _____
_____

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

What should I do?

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

What happened?

- **The problem is related to** _____

What is being done?

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

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

- _____

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

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

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL E
EMERGENCY WATER NOTIFICATION
A LEVEL E WATER ADVISORY IS IN EFFECT

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

□ Entire Water System or □ Other: _____
_____

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

What should I do?

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

What happened?

- **The problem is related to** _____

What is being done?

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

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

- _____

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

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

This notice was distributed by _____

State Water System ID# _____ Date Distributed: _____

Emergency Short Forms

Emergency Communication Information

	Name	Phone Number	Email
Designated spokesperson:	Dave Mills (Charles Town Utility Board City Manager and Chairman)	CONFIDENTIAL	CONFIDENTIAL
Alternate spokesperson:	Pete Kubic (Charles Town Utility Board Vice Chairman)	CONFIDENTIAL	CONFIDENTIAL
Designated location to disseminate information to media:	Charles Town Utility Board 832 South George Street Charles Town, WV 25414 P: 304-724-3280 F: 304-725-4313		
Methods of contacting affected residents:	**Word of mouth, posted notices, door-to-door canvasing, radio, newspaper, etc.** **Auto Dialer of all utility users based on bills is in place.**		

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 ext. 125	
	Spirit of Jefferson	Publisher	304-725-2046	editor@spiritofjefferson.com
	WRNR Radio		304-263-6586 304-263-6540	info@talkradiornr.com
	WKMZ Radio		304-263-2770	
	WEPM 1340		304-263-8868 304-263-4321	
	WYII		304-263-0637	
	WHAG Channel 25		301-797-4400	
	WLTF		Main: 304-263-8868 Studio: 888-797-5975	

Emergency Services Contacts

	Name	Emergency Phone	Alternate Phone	Email
WV State Police		911	CONFIDENTIAL	CONFIDENTIAL
Jefferson County Sheriff	Pete Dougherty	911	CONFIDENTIAL	CONFIDENTIAL
Charles Town Police Department	Chief Chris Kutcher Captain Glenn Stevens	911	CONFIDENTIAL	CONFIDENTIAL
City of Ranson Police Department	Chief William Roper Captain Robbie Roberts	911	CONFIDENTIAL	CONFIDENTIAL
Local Fire Departments	Citizens Fire Company	911	CONFIDENTIAL	CONFIDENTIAL
	Independent Fire Company	911	CONFIDENTIAL	CONFIDENTIAL
Local Ambulance Service	Jefferson County Ambulance Authority	911	CONFIDENTIAL	CONFIDENTIAL
Jefferson County Emergency Services Agency	Denise Pouget, Director Ed Hannon, Deputy Director	911	CONFIDENTIAL	CONFIDENTIAL
Hazardous Material Response Service	Barbara Miller Director Jefferson County Office of Homeland Security and Emergency Management	911	CONFIDENTIAL	CONFIDENTIAL

Key Personnel

	Name	Title	Phone	Email
Key staff responsible for coordinating emergency response procedures?	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
Staff responsible for keeping confidential PSSC information and releasing to emergency responders:	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

Sensitive Populations

Other communities that are served by the utility:	Hospital, Nursing Homes, City of Ranson, Jefferson County Schools, and Charles Town Races		
Major user/sensitive population notification:	**Name**	**Emergency Phone**	**Alternate Phone**
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL

EED District Office Contact:	**Name**	**Phone**	CONFIDENTIAL
	Bradley Reed	CONFIDENTIAL	CONFIDENTIAL
	Alan Marchun	CONFIDENTIAL	CONFIDENTIAL
OEHS Readiness Coordinator	Warren Von Dollen	CONFIDENTIAL	CONFIDENTIAL

Downstream Water Contacts:	**Water System Name**	**Contact Name**	**Emergency Phone**	**Alternate Phone**
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
Surface Water Modeling Capabilities	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	CONFIDENTIAL	CONFIDENTIAL	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?	Yes
When was the Emergency Response Plan developed or last updated?	April 2016

Emergency Contact Information

State Emergency Spill Notification
1-800-642-3074

Office of Emergency Services
http://www.wvdhsem.gov/
Charleston, WV- (304) 558-5380

WV Bureau for Public Health Office of Environmental Health Services (OEHS)
www.wvdhhr.org/oehs

Readiness Coordinator- 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

CONFIDENTIAL

Appendix E. Supporting Documentation

CONFIDENTIAL

terradon.com

P.O. Box 519
Nitro, WV 25143
Tel: 304-755-8291

P.O. Box 1635
Lewisburg, WV 24901
Tel: 304-645-4636

P.O. Box 307
Charlton Hts, WV 25040
Tel: 304-541-7655

101 North Court Street
Ripley WV, 25271
Tel: 304-532-4909

August 18, 2016

Monica A. Whyte, Environmental Resources Specialist
Kearneysville District Office
1948 Wiltshire Road, Suite 6
Kearneysville, WV 25430
Telephone: 304-725-9453
Monica.A.Whyte@wv.gov

Dear Monica,
Thank you for providing comments on the Charles Town Source Water Protection Plan in your letter dated August 10, 2016. We appreciate the opportunity working with DHHR throughout the Source Water Protection Plan process. Please consider this letter addressing the comments as an addendum to the Charles Town Source Water Protection Plan.

Comment 1: *Table 1: Population Served by the Charles Town Utility Board, the date of the most recent Source Water Assessment Report (SWAR) in our files is November, 2014. Please confirm if there is a more recent SWAR as noted in the Charles Town SWPP dated December 18, 2015.*

Reply: DHHR is correct, as the most recent Source Water Assessment Report conducted for the Charles Town Utility Board is confirmed to be July 2004. An electronic copy of this report was provided by DHHR via email to TERRADON on August 18, 2016. TERRADON inadvertently used the most recent Sanitary Survey date in the draft SWPP. This date has been corrected in the master copy of the Public and Confidential reports. An updated Table 1 is provided with this letter for insertion into the existing hard copy reports.

Comment 2: *Single Source Feasibility Study: It is noted that the treated water storage capacity of the Charles Town WTP, at 3.080 MGD, plus the additional 1 MGD storage tank to be constructed this year, will not only provide 2.4 days of storage based on the system average daily usage of 1.68 MGD, but also will provide 1.94 days of storage based on the daily maximum usage of 2.104 MGD. This allows for nearly two days of storage capacity even at the maximum usage. Please continue your efforts in building storage capacity and seeking alternative water sources.*

Reply: Charles Town Utility Board (CTUB) will continue to increase storage capacity as the demand arises. CTUB will ensure that when additional storage capacity is required, that a minimum of 2 days of storage capacity is maintained. As indicated in the SWPP, CTUB is also continuing to assess additional sources of raw water, including groundwater well(s).

Should you have any additional questions or comments, CTUB will be glad to work with DHHR to address any concerns or comments.

Sincerely,

Samuel P. Wilkes

Samuel P. Wilkes
Geo-Environmental Department Manager

terradon.com

P.O. Box 519
Nitro, WV 25143
Tel: 304-755-8291

P.O. Box 1635
Lewisburg, WV 24901
Tel: 304-645-4636

P.O. Box 307
Charlton Hts, WV 25040
Tel: 304-541-7655

October 14, 2016

Monica A. Whyte, Environmental Resources Specialist
Kearneysville District Office
1948 Wiltshire Road, Suite 6
Kearneysville, WV 25430
Telephone: 304-725-9453
Monica.A.Whyte@wv.gov

Dear Monica,
This Response to Comments Document summarizes the verbal comments by Autumn Crowe, Program Director of the West Virginia Rivers Coalition during the public hearing on September 8, 2016. Follow-up written comments similar to the verbal comments from the public hearing were also submitted to WVDHHR by the WV Rivers Coalition in a letter dated October 13, 2016. TERRDON appreciates the opportunity to work with Charles Town Utility Board and WVDHHR throughout the Source Water Protection Plan process. Please consider this letter addressing the comments as an addendum to the Charles Town Source Water Protection Plan.

***Comment 1**: Contingency Plan - Charles Town will request Groundwater Protection Plans (GPPs) and Stormwater Management Plans from commercial and industrial facilities. Does this include all facilities within the Source Water Protection Area (SWPA)? What will Charles Town do with this info? How will they reach out to facilities of concern directly? Should they also consider reviewing Spill Prevention Response Plans for ASTs?*

Reply: Requesting these plans from facilities within the Zone of Critical Concern (ZCC) and potentially from within the Source Water Protection Area that is within West Virginia will be conducted at the discretion of CTUB and future meetings of the Source Water Protection Team. If these plans are determined to be valuable to CTUB, facilities will send written request letters to obtain these plans. The Spill Prevention Response Plans for the regulated Aboveground Storage Tanks may also be requested from regulated facilities or WVDEP. Upon receipt of these plans, the Utility Manager or designee will review the plans for pertinent information, such as chemicals of concern, volumes of such chemicals, emergency response plans, and critical communications plans in the event of an accident or spill. It is anticipated that CTUB would continue to keep open lines of communications with facilities on an ongoing basis.

Comment 2: *Alternative Source Water - In Table 11, the use of an alternative intake is noted as "Potential" yet there is no other description of an alternate water supply. Other than storage tanks, what is the alternative water supply?*

Reply: The Charles Town Utility Board (CTUB) did conduct an engineering evaluation analysis as required for a single source Public Drinking Water Utility. This evaluation is presented in Appendix

D of the confidential Source Water Protection Plan. This evaluation is deemed confidential by CTUB and not presented in the public plan. However, this analysis can be reviewed at the CTUB office by making an appointment with CTUB's General Manager. The results of the engineering evaluation can be located on pages 77 through 79 of the confidential SWAP document, which shows that the most technological and cost effective solution to comply with Senate Bill 373 is to add additional finished water storage capacity. CTUB has already conducted planning studies, obtained funding, and is ready to construct a 2 million gallon storage tank at the treatment plant by the end of 2016. CTUB will ensure that when additional storage capacity is required, that a minimum of 2 days of storage capacity is maintained. As indicated in the confidential SWPP, CTUB evaluated alternate sources of raw water such as: nearby rock quarry, Evitts Run, interconnection with a neighboring Public Utility, raw water storage, and installing groundwater wells. All of these options had technical and physical challenges that made them unfeasible at this time. The most feasible option is to increase finished water storage capacity.

Comment 3: *Early warning monitoring system – This section is mostly marked as confidential. It's not clear how source water is monitored. Can any more details be provided? While not required by the law, has Charles Town considered sample collection or monitoring further upstream on the Shenandoah to provide more warning of a contamination event?*

Reply: The Charles Town Utility Board (CTUB) did review their current source water monitoring protocols and they meet the current requirements mandated by the WVDHHR. The early warning monitoring system worksheet in Appendix B, Form B of the Public SWAP report, is marked as confidential. However, this information is available in the full Confidential SWAP plan on page 54 and can be reviewed at the CTUB office by making an appointment with CTUB's General Manager. If funding sources become available, CTUB can upgrade existing equipment at the water intake on the Shenandoah River. This would be adequate since the raw water is pumped almost 2 miles to the water treatment plant and automatic shutoffs can be activated before contaminated water would reach the water treatment plant. This would be the first priority in upgrading the existing monitoring equipment at the raw water intake. However, CTUB would consider additional early warning monitoring further upstream in the Shenandoah River if additional sources of funding become available in the future.

Should you have any additional questions or comments, CTUB and TERRADON will be glad to work with DHHR to address any concerns or comments.

Sincerely,

Samuel P. Wilkes
Geo-Environmental Department Manager

CC:
Jane Arnett, General Manager
Charles Town Utilities

WEST VIRGINIA RIVERS COALITION

3501 MacCorkle Ave. SE #129 • Charleston, WV 25304 • (304) 637-7201 • www.wvrivers.org

October 13, 2016

West Virginia Department of Health and Human Resources,
Bureau for Public Health,
Office of Environmental Health
350 Capitol Street, Room 313
Charleston, WV 25301-3713

Attn: Source Water Protection Program

Re: Protection Plan Comments

Submitted electronically to: EEDSourceWaterProtection@wv.gov

Dear Mr. Rodeheaver,

The Source Water Protection Plans are a critical first step in the protection of our drinking water sources. These plans help to identify and prioritize potential drinking water contamination sources and help water utilities develop a plan to respond to a contamination event. Involving the public in the development of these plans is crucial part of the planning process. These hearings need to be advertised well in advance to give the public ample opportunity to attend.

Overall, these plans are thorough, well-organized and well-designed. There is good information on the system that is easy to understand.

Harpers Ferry SWPP

- Contingency Plan-It's not clear what the back-up power supply is, if there is one. Table 12, Generator capacity about what type of generator and how the system is set up is marked as confidential. A list of fuel providers is give, but then is says that generators are not in place. Harpers Ferry plans to upgrade the facility with back-up power generation-is there currently any back-up power generation capabilities?
- Early warning system-seems that all samples are collected right near the intake. While not required by the law, has Harpers Ferry considered sample collection or monitoring further upstream on Elk Run or the Potomac, to provide more warning of a contamination event?
- Contamination threats - The mapping provided in this version only shows previously identified PSSCs. Is there additional mapping that shows the BPH data? And the locally identified PSSCs?

Charles Town SWPP

- Contingency Plan - Charles Town will request GPPs and Stormwater management plans from commercial and industrial facilities. Does this include all facilities within the SWPA? What will Charles Town do with this info? How will they reach out to facilities of concern directly? Should they also consider reviewing Spill Prevention Response Plans for ASTs?

- Alternative Source Water - In Table 11, the use of an alternative intake is noted as “Potential” yet there is no other description of an alternate water supply. Other than storage tanks, what is the alternative water supply?
- Early warning monitoring system – This section is mostly marked as confidential. It’s not clear how source water is monitored. Can any more details be provided? While not required by the law, has Charles Town considered sample collection or monitoring further upstream on the Shenandoah to provide more warning of a contamination event?

Shepherdstown

- Contingency Plan – It’s great that they have formally identified a secondary intake. There is no generator for emergencies; is there a plan for one? Leakages in the system are identified. Is there a plan in place for preparing leakage?
- Outreach - They have an education and outreach plan, but it is web-based. They need to consider that not everyone is on the internet. When will it be implanted? We recommend press and media strategies to inform the public of its availability.
- Contamination threats – Please state methods for prioritizing risk of PSSCs.

Thank you for the opportunity to comment on these important plans.

Sincerely,

Autumn Crowe
Program Director
West Virginia Rivers Coalition