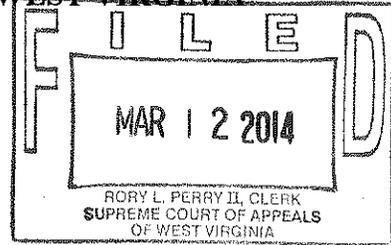


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IN THE SUPREME COURT OF APPEALS OF WEST VIRGINIA

14-0112



STATE OF WEST VIRGINIA
ex rel. COVENANT HOUSE,
MONIQUE WATKINS, and
VIRGINIA GARDNER,
Petitioners,

PLEADING FILED
WITH MOTION

v.

RANDY C. HUFFMAN, Secretary of the West Virginia
Department of Environmental Protection,
LETITIA TIERNEY, Commissioner of the Bureau for Public Health,
and KAREN L. BOWLING, Secretary of the West Virginia
Department of Health and Human Resources,
Respondents.

APPENDIX OF DHHR RESPONDENTS

PATRICK MORRISEY
ATTORNEY GENERAL

Christopher S. Dodrill (WV State Bar #11040)
Assistant Attorney General
Office of the Attorney General of West Virginia
Appellate Division
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Charleston, WV 25301
Phone: (304) 558-5830
Fax: (304) 558-5833
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*Counsel for Respondents Karen L. Bowling,
Secretary of the West Virginia Department of
Health and Human Resources, and Letitia
Tierney, Commissioner of the Bureau for
Public Health*

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CERTIFICATION

I, Christopher S. Dodrill, counsel for the Respondents, Karen L. Bowling, Secretary of the West Virginia Department of Health and Human Resources, and Letitia Tierney, Commissioner of the Bureau for Public Health, do hereby certify that the contents of this Appendix record are true and accurate copies of the items contained herein.


CHRISTOPHER S. DODRILL

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STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Earl Ray Tomblin
Governor

Rocco S. Fucillo
Cabinet Secretary

February 12, 2013

Billie J. Suder
WVAWC-Kanawha Valley Dist
585 Gladly Fork Road
Weston, WV 26452

Re: SANITARY SURVEY
WVAWC-Kanawha Valley Dist
PWSID No. WV3302016
KANAWHA COUNTY

Dear Ms. Suder:

On January 08, 2013 a Sanitary Survey was conducted of the referenced water system by a representative of the Saint Albans District Office of the Office of Environmental Health Services (OEHS). This was performed in accordance with the requirements of the *West Virginia Public Water System Legislative Rules*. We would like to thank you and the site visit participants for the courtesy and assistance provided during the inspection of your public water supply system.

Eight major elements were reviewed in detail during this sanitary survey. The eight major elements are: source, treatment, distribution system, finished water storage, pumps/pump facilities and controls, monitoring/reporting/data verification, water system management/operation, and operator compliance with State requirements. Deficiencies found or recommendations made concerning these eight major elements are presented in the following sections.

Based upon review of the available records and visual examination of the facilities, no significant deficiencies require your immediate attention; however, some minor deficiencies and recommendation exist and are documented within this letter. Your system should be commended on all achieving a level of no significant deficiencies.

BUREAU FOR PUBLIC HEALTH
OFFICE OF ENVIRONMENTAL HEALTH SERVICES
Saint Albans District Office
808 B Street, Suite G
Saint Albans, West Virginia 25177
Telephone: (304) 722-0811 FAX: (304) 722-0814

Significant Deficiencies

A significant deficiency is defined as: "Any defect in a system's design components, operation, maintenance, or administration, as well as any failure or malfunction of any system component, that the department determines may cause an unacceptable public health risk; have the potential to cause the introduction of contamination into drinking water; or may adversely affect the reliable delivery of safe drinking water to the public."

No observations were recorded in this category.

Minor Deficiencies

The following observations made at the time of the survey don't fully meet the definition listed previously for significant deficiencies at the present time but have the potential to result in significant deficiencies in the near future if not addressed. WVDHHR strongly requests that the following minor deficiencies be addressed to help maintain compliance with primary drinking water regulations.

| FACILITY | CATEGORY | DESCRIPTION |
|--|------------------------|--|
| [REDACTED] TANK | Finished Water Storage | Inadequate overflow erosion control measures provided. |
| Comments: The overflow piping discharges to a makeshift drainage device near the tank foundation. Per 64CSR77-9.1.f, storage tank overflows should discharge over a drain inlet structure or splash plate. | | |
| FACILITY | CATEGORY | DESCRIPTION |
| TREATMENT PLANT | Treatment | Other item found not covered under available observations. |
| Comments: The [REDACTED] leak detection system is not equipped with a local audible alarm per 64CSR77-7.4.c. The intent of the local alarm is to alert other personnel who may be in the immediate area of the potential hazard. | | |

Recommendations

The following observations made at the time of the survey have the potential to produce or to result in minor or significant deficiencies in the near future. WVDHHR recommends that the following be addressed to help maintain compliance with primary drinking water regulations.

| FACILITY | CATEGORY | DESCRIPTION |
|--|-----------------------------------|--|
| [REDACTED] SYSTEM | Distribution System | Percentage (%) of unaccounted water for previous calendar year was greater than 15%. |
| Comments: In the annual PSC filing, WVAWC reports water loss rate a on a 'state wide' basis. At the time of survey the [REDACTED] Plant estimates that their current loss rate was ~20%. The system should continue its on-going efforts to reduce this rate. | | |
| FACILITY | CATEGORY | DESCRIPTION |
| [REDACTED] STATION | Pump/pumping facility and control | Other item found not covered under available observations. |
| Comments: The following items were also noted for the [REDACTED] Station. 1) The station should be equipped with a floor drain per 64CSR77-8.3.a. 2) The exterior flashing on the roof is starting to deteriorate, this should be repaired to extend the life of the building and properly protect the equipment inside. | | |
| FACILITY | CATEGORY | DESCRIPTION |
| [REDACTED] #1 TANK | Finished Water Storage | Other item found not covered under available observations. |
| Comments: The following deficiencies were noted for the [REDACTED] #1: 1) Vegetation is growing on the fence and needs to be removed. 2) There is an accumulation of gravel around the base of the tank. The site around the tanks needs to be graded to permit proper drainage. 64CSR77 9.1.o requires the area surrounding a ground-level structure shall be graded in a manner that will prevent surface water from standing within fifty (50) feet. This accumulation of material prevents drainage. | | |
| FACILITY | CATEGORY | DESCRIPTION |
| [REDACTED] TANK | Finished Water Storage | Other item found not covered under available observations. |
| Comments: The grout seal is separating from the tank and tank ring. This needs to be repaired to prevent damage to the tank floor from water standing under the tank. This can cause a failure of the tank. | | |
| FACILITY | CATEGORY | DESCRIPTION |
| [REDACTED] TANK | Finished Water Storage | Other item found not covered under available observations. |
| Comments: The following deficiencies were noted for the [REDACTED] Tank: 1) Grout seal is deteriorating and needs to be repaired. 2) Vegetation is growing on the fence and needs to be removed. | | |

| FACILITY | CATEGORY | DESCRIPTION |
|---|------------------------|------------------------------|
| [REDACTED] TANK | Finished Water Storage | Storage tank needs painting. |
| Comments: There is significant rust and mildew on the exterior of this tank. This vessel should be cleaned of the rust and mildew and the rust areas repainted to extend the service life of this tank. | | |
| FACILITY | CATEGORY | DESCRIPTION |
| [REDACTED] TANK | Finished Water Storage | Storage tank needs painting. |
| Comments: There is significant graffiti and some exterior rust on the tank. The system should consider cleaning and repainting to extend the life of the tank. | | |

Reminders

The following are general reminders that all WV public water systems need to keep in mind for continued compliance in various areas.

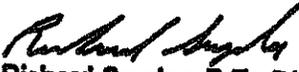
- West Virginia and federal rules require the records of all laboratory tests, chlorine residuals, and copies of written communication relating to inspections be kept on file for a period of ten (10) years.
- According to West Virginia rules, all plans for the future use of a source of supply, treatment, construction of new wells, water treatment plants, pumping stations, finished water storage facilities and distribution facilities including line extensions greater than 1000 feet used in connection with the public water supply system must be approved by DHHR in our Charleston office prior to construction. A permit application must be submitted and approved by DHHR/OEHS for any such improvements.
- West Virginia rules require that you immediately notify the appropriate OEHS offices and responsible local officials when a major breakdown or serious loss of water service occurs which presents or may present an imminent and substantial endangerment to human health.
- Operator training hours are required during every two-year renewal period for water and wastewater operators. Failure to attain the required continuing education hours (CEH) will result in non-renewal of an operator's certificates. Please contact the Training and Certification Unit office at 304-356-4335 or 304-356-4336, or my office if you need a list of training classes and dates.

Sanitary Survey
WVAWC-Kanawha Valley Dist
January 29, 2013
Page 5

Since no "significant deficiencies" were found during this survey you do not need to submit a written response to the items listed; however, the items listed as "minor" or as "recommendations" could eventually lead to more serious conditions so the system should try to address them.

Should you have any comments or questions concerning this report and its contents please contact me by telephone at 304-356-5259 or by email at Richard.C.Snyder@wv.gov.

Sincerely,


Richard Snyder, P.E., District Engineer
St. Albans District Office
Environmental Engineering Division

RCS

Enclosure

pc: Jon Jarvis, Chief Water Operator, WVAWC Kanawha Valley District
Amy Swann, Director, Water and Wastewater Division WV Public Service Commission
Kanawha Health Department
Saint Albans District Office file
Central Office File, Water Sanitation Surveys

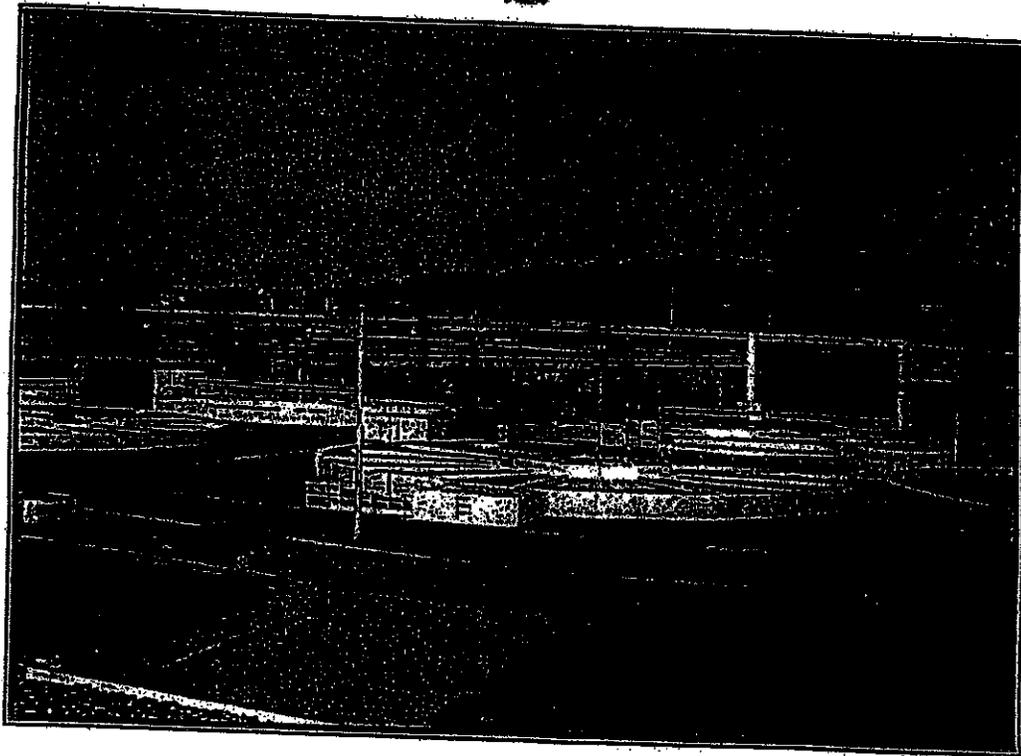


SANITARY SURVEY

PWSID No. [REDACTED]

**WEST VIRGINIA AMERICAN WATER-KANAWHA VALLEY DISTRICT
CLASS 4 SURFACE WATER TREATMENT PLANT AND DISTRIBUTION SYSTEM**

KANAWHA COUNTY



BY: RICHARD C. SNYDER, P.E., DISTRICT ENGINEER

**OFFICE OF ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL ENGINEERING DIVISION
WV BUREAU FOR PUBLIC HEALTH
SAINT ALBANS DISTRICT OFFICE**

January 8, 2013

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WVAWC-KANAWHA VALLEY
PWSID No. [REDACTED] -KANAWHA COUNTY
CLASS 4 SURFACE WATER TREATMENT PLANT AND DISTRIBUTION SYSTEM

Sanitary Survey — January 8, 2013

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ATTACHMENTS:

- A1 - Flow Diagram of Treatment Plant
- A2 - Flow Diagram Legend (2 Pages)
- A3 - Treatment Plant Schematic
- B - Treatment Plant [REDACTED] Control Screens (12 Pages)
- C - CT Calculations - Worst Case Conditions (3 Pages)
- D1 - AWOP Turbidity Profiles (3 Pages)
- D2 - Filter Backwash / Turbidity Graph
- D3 - Backwash Procedure (3 Pages)
- E1 - Finished Water Storage Tank Listing (2 Pages)
- E2 - Finished Water Tank [REDACTED] Control Screens (2 Pages)
- F - Booster Station Listing (3 Pages)
- G1 - Certified Operator Listing (2 Pages)
- G2 - System Employee Listing
- H1 - Raw Water Analysis
- H2 - Finished Water Analysis
- I1 to I6 - Photographs

REPORT SUMMARY

The West Virginia American Water-Kanawha Valley treatment plant is located on the [REDACTED] of the Elk River in Charleston, West Virginia and the distribution system services portions of Kanawha, Putnam, Cabell, Boone, and Lincoln Counties.

Raw water is supplied from the Elk River adjacent to the treatment facility. For 2012, the plant averaged thirty million two hundred forty eight thousand gallons per day (30,248,000) gallons per day at a rate of approximately twenty one thousand (21,000) gallons per minute while operating twenty four hours per day. The plant supplies water through a distribution system of approximately one thousand seven hundred (1,700) miles of pipeline to a total population of two hundred seventy six thousand (276,000). Finished water storage capacity in the system is calculated to be thirty eight million (38,000,000) gallons in one hundred four (104) tanks. Storage tank water levels and one hundred twenty seven (127) [REDACTED] are primarily controlled by a sophisticated [REDACTED] system. The treatment plant, rated at 50 million gallons per day (MGD), includes the following major facilities: [REDACTED] pumps, [REDACTED] pumps, [REDACTED] pumps, [REDACTED] pumps, [REDACTED] clarifiers, [REDACTED] conventional filters, 1 [REDACTED], and [REDACTED]. There are adequate personnel to manage and operate the system under normal circumstances and the operators currently on staff are in compliance with State requirements. All required system monitoring and reporting are current and in compliance.

Eight major elements were reviewed in detail during the survey and discussed as separate sections within this Sanitary Survey. These major elements are: source, treatment, distribution system, finished water storage, pumps/pump facilities and controls, monitoring/reporting/data verification, water system management/operation, and operator compliance with State requirements. There are no outstanding violations against the system and the system is producing water in compliance with the current regulations pursuant to the *West Virginia Public Water Systems Legislative Rules*.

No significant deficiencies were noted during this survey.

SOURCE

**WATERSHED MANAGEMENT PROGRAM
(SURFACE WATER SOURCE ONLY)**

Watershed Description (examples: tributaries, counties/areas) *The system uses the [redacted] as its raw water source. The [redacted], generally considered a high quality stream, begins approximately [redacted] treatment plant in [redacted]. Tributaries of the [redacted] include portions of Pocahontas, Randolph, Webster, Nicoles, Braxton, Clay, Roane, and Kanawha Counties. [redacted] located approximately [redacted] upstream.*

Watershed Characteristics (examples: soil types, activities) *[redacted] vast drainage area contains numerous types of soils and a wide variety of land uses. The primary soil types for the area around the intakes and immediately upstream are reddish brown clays with rapid runoffs. Primary activities are farming, logging, oil and gas production, and some coal mining.*

Number of intakes 3 (equipped with bar racks and traveling screens)

- Does the system own the entire watershed?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|
- If the system does not own the entire watershed, does it own the critical areas?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|
- Does the system have any Landowner Agreements for watershed protection?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|
- Are any regulatory agency permits issued in the drainage (mining, logging)?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|
- Does the system complete an Annual Watershed Management Report?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

**SOURCE VULNERABILITY ASSESSMENT
Sensitivity of the source water protection area (SWAP)**

- Is the [redacted] located near shore or in a turbid water area?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|
- Are the slopes in the immediate drainage areas steep?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|
- Is the land in the immediate areas non-vegetated?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

SOURCE

Are large paved or non-permeable areas present in the immediate area?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the [REDACTED] have the ability to draw from multiple levels?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

Does the system have the ability to backflush or clean the [REDACTED]?

| | | | | |
|-------------------------------------|-----|-------------------------------------|----|--------------------------|
| <input checked="" type="checkbox"/> | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-------------------------------------|-----|-------------------------------------|----|--------------------------|

Is the [REDACTED] screened?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is the area around the [REDACTED] restricted?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are there known sources of pollution near or at the [REDACTED]?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

The [REDACTED] maintains a lift station approximately [REDACTED] upstream. An [REDACTED] storage facility is located near [REDACTED] and a [REDACTED] extraction plant is located near [REDACTED].

Does the system have an emergency spill response plan?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Raw water pump elevations [REDACTED] ft.

100-year flood elevation [REDACTED]

(Per FEMA flood maps)

SOURCE WATER QUALITY

Does the system regularly monitor raw water?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

| Yearly Average Raw Water Results | | | | | | | |
|----------------------------------|------|------------------|----------------------|--------------------|--------------------|----------------|---------------------|
| | pH | Turbidity NTU | Alkalinity (mg/L) | Hardness (mg/L) | Fluoride (mg/L) | Iron (mg/L) | Manganese (mg/L) |
| 2010 | 7.23 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 2011 | 7.39 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 2012 | 7.34 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

List known causes of raw quality fluctuations

Storm events, river dredging, and Sutton Lake discharges.

Does system source generally supply adequate quantity to meet demand?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system regularly have seasonal shortages of raw water?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

Has the system ever had a shortage of raw water?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

Has the system ever instituted a conservation plan?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

Does the system have a master meter to measure quantity of water treated?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

SOURCE

Has the system ever had problems with silting, debris, or clogged screens?
Debris is occasionally manually raked from intake screens.

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system have [REDACTED] (Can system meet demand with a unit out)?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system regularly check the actual capacity versus design capacity? *Indirectly measured during times of high demand.*

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

Are the source facilities visited/inspected daily?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Do the source facilities appear to be well maintained?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are the source facilities protected from entry by animals?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Do the [REDACTED] water lines deliver water directly to the treatment plant?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are the [REDACTED] water lines reliable for continuous flow?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is the source used the best possible available source?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

[REDACTED] water facility design capacity [REDACTED] MGD

Actual measured [REDACTED] water facility capacity

75 MGD [REDACTED]

TREATMENT

Treatment Facility Name

[REDACTED] Regional Water Treatment Facility

Is the treatment facility out of the 100-year flood plain elevation?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system have a backup source of power?

A [REDACTED] is available to maintain the [REDACTED] system and general lighting.

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

If the system has a generator, how often is it tested?

N/A

Design Capacity of the treatment facility

[REDACTED] MGD (Approved for [REDACTED] MGD)

Historic maximum daily production

44 MGD

Does the system have [REDACTED] (Can system meet demand with a unit out)?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system regularly check the actual capacity versus design capacity?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Specify the treatment process/objective which best describes the facility.
(See pages 3-38, 3-39, and 3-40 of the EPA Guidance Manual for description of each)

| | | | | | |
|-----------------------------------|-------------------------------------|-----------------------------|--------------------------|------------------------|--------------------------|
| Conventional Filtration | <input checked="" type="checkbox"/> | Direct Filtration | <input type="checkbox"/> | In-Line Filtration | <input type="checkbox"/> |
| Slow Sand Filtration | <input type="checkbox"/> | Single Stage Softening | <input type="checkbox"/> | Two Stage Softening | <input type="checkbox"/> |
| Conventional Filtration/Softening | <input type="checkbox"/> | Split and Complex Treatment | <input type="checkbox"/> | Membrane Filtration | <input type="checkbox"/> |
| Greensand Filtration | <input type="checkbox"/> | Simple Aeration Plant | <input type="checkbox"/> | Disinfection Treatment | <input type="checkbox"/> |

TREATMENT

PRESEDIMENTATION

Number of Presedimentation units 0

Total Volume of Presedimentation units N/A

How often are the Presedimentation units cleaned? N/A

Are the Presedimentation unit volumes adequate to adequately reduce turbidity? N/A Yes No

Does the system have waterflow problems on the Presedimentation units? N/A Yes No

RAPID MIX

(Rapid Mix used very seldom on an as needed basis)

Number of Rapid Mix units (East & West)

Type of Rapid Mix units

In-Line Static Mixer Mechanical Other (list type) _____

Total Volume of Rapid Mix units [redacted] gallons each

How often is maintenance performed on Rapid Mix units? As needed

Do the Rapid Mix units appear visually adequate? Yes No

Is the [redacted] adjustable in the Rapid Mix units? Yes No

Are [redacted] added [redacted] to or before the Rapid Mix units? Yes No

Are any hydraulic inadequacies present at the Rapid Mix? Yes No

Are any cross-connections present at the Rapid Mix (Ex: [redacted] feed lines)? Yes No

TREATMENT

CHEMICALS AND CHEMICAL FEED SYSTEMS

List the chemicals currently being used/applied

| | | YES | NO |
|----------------------------------|--|-----|----|
| AS3710F Blended Polymer | E&W common raw water header (primary coagulant) | ✓ | |
| 50% | E&W filter combined effluent, mixing chamber (as needed) and E&W to filter (as needed for pH adjustment) | ✓ | |
| 23% | E&W filter combined effluent | ✓ | |
| 1:3 | E&W filter combined effluent | ✓ | |
| | E&W common raw water header | ✓ | |
| Powder Activated Carbon (Slurry) | mixing chamber (as needed) | ✓ | |
| Super | mixing chamber | ✓ | |
| Filter Aid | E&W to filters | ✓ | |
| | E&W filter combined effluent, E&W to filter (as needed); mixing chamber (as needed) | ✓ | |

* The system plans on switching to Sodium Permanganate in the future.

Are the chemicals used appropriate for treatment desired/required?

| | | |
|-----|---|----|
| Yes | ✓ | No |
|-----|---|----|

List the chemical feed systems being used

| Chemical | Feeder Type/Model | Size | Max. Pressure | Current Settings |
|------------|-------------------|-----------|---------------|------------------|
| AS3710F | 1-1 | GPH | psi | Varies |
| Super | system | GPH | — | Varies |
| 23% | 2 pumps | GPD | psi | Varies |
| 1:3 | pumps | GPD | psi | Varies |
| | feeder | — | — | Varies |
| | 6 | #/day ea. | — | Varies |
| Carbon | Liquid feeder | — | — | Varies |
| Filter Aid | 2 pumps | SPD | psi | Varies |
| 50% | 6 pumps | GPD | psi | Varies |

See Attachment B for typical Chemical Feed Setting for 1/25/2013.

TREATMENT

| | CHEMICALS USED | | | | | | | | | | |
|------|-----------------------------|-----------------------------|------------------------------------|------------------------------------|---|-----------------------------|--------------------------------------|--|--|-------------------------------------|--------------------------------------|
| | [REDACTED] Liq. (ppm) | [REDACTED] Liq. (ppm) | 50% [REDACTED] Liq. (ppm) | 23% [REDACTED] Liq. (ppm) | Corrosion Inhib. 1:3 [REDACTED] Liq. (ppm) | [REDACTED] Liq. (ppm) | Super [REDACTED] Liq. (ppm) | Filter Aid [REDACTED] Liq. (ppm) | Filter Aid [REDACTED] Liq. (ppm) | [REDACTED] Pre Liq. (mg/l) | [REDACTED] Post Liq. (mg/l) |
| 2010 | [REDACTED] | [REDACTED] | 14.8 | 1.4 | 2.3 | 0.6 | 0.17 | 0.17 | 1.25 | 1.27 | 2.61 |
| 2011 | [REDACTED] | 12.8 | 13.2 | 1.3 | 2.3 | 0.5 | 0.00 | 0.41 | 0.89 | 1.42 | 2.63 |
| 2012 | 9.1* | 5.5 | 13.2 | 1.2* | 2.8 | 0.6 | 0.64 | 0.54 | 0.72 | 1.32 | 2.71 |

* April through December

Are all feeders sized above the historical maximum dosage rate?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are the feeders used compatible with chemicals used?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are the feeders used in good condition?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Do all feeders have adjustable feed rates?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are the feed rate adjustments made manually or automatic? Both

| | | | |
|--------|-------------------------------------|-----------|-------------------------------------|
| Manual | <input checked="" type="checkbox"/> | Automatic | <input checked="" type="checkbox"/> |
|--------|-------------------------------------|-----------|-------------------------------------|

All feed rate adjustments are automatically controlled by flow or analyzers except for manual adjustments for [REDACTED] and [REDACTED]

How often are chemical feeders calibrated/ checked for accuracy?

Annually or when maintenance is performed or as needed

How are quantities of chemicals fed determined (weighed by scales, calculated, etc.)?

Weighted and measured by tank levels

Does the system have [REDACTED] for each of the feed systems?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

If the system does not have [REDACTED] for each, are adequate spares available?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

TREATMENT

List the storage used for each chemical

| | | | |
|-----------------------|--|------------|--------------------|
| AS3710F [REDACTED] | 2- [REDACTED] gal. bulk tanks | [REDACTED] | [REDACTED] gallons |
| Super [REDACTED] | [REDACTED] gallon totes | [REDACTED] | [REDACTED] totes |
| 23% [REDACTED] | 1- [REDACTED] gal. bulk tank | [REDACTED] | [REDACTED] gallons |
| 1:3 [REDACTED] | 3- [REDACTED] gal. bulk tanks | [REDACTED] | [REDACTED] gallons |
| [REDACTED] | [REDACTED] gallon drums | [REDACTED] | [REDACTED] lbs. |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | 2- [REDACTED] gal. buried slurry tanks | [REDACTED] | [REDACTED] gallons |
| Filter Aid [REDACTED] | 1- [REDACTED] gallon. bulk tank | [REDACTED] | [REDACTED] gallons |
| 50% [REDACTED] | 4- [REDACTED] gal. bulk tanks | [REDACTED] | [REDACTED] gallons |

If bulk tanks are used, are day-use tanks provided?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are all chemical storage areas adequately labeled/marked?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system have backflow prevention on each of the feed units?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is adequate ventilation provided in all chemical feed/storage areas?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

CHLORINE GAS SAFETY

Does the system have a properly functioning [REDACTED] leak detector?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

If equipped with a detector, is it linked to both an audible and a visual alarm?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is proper self-contained breathing apparatus (SCBA) available?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

If so, is the SCBA properly maintained/fully charged?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

If a leak repair kit available for the [REDACTED] ton cylinders

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is a [REDACTED] available for leak location?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

TREATMENT

Do the Coagulation / Flocculation units appear visually adequate?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

How is sludge removed and disposed?

Sludge is being pressed and landfilled.

Any sludge visible in the units?

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

Do the Sedimentation / Clarification units appear visually adequate?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Settled Turbidity during survey

NTU-West
NTU-East

Raw Turbidity during survey

NTU

FILTRATION

Number of Filtration units

East Side & West Side

Type of Filtration units

[Redacted]

Size of Filtration units

ft² each

Media/thicknesses

sand and GAC on Leopold underdrains

filters were rebuilt in 2012. There are 6 more filters scheduled for rebuilding in 2013. filters are currently on a 3-4 years rebuild schedule.

Can system meet demand with unit out of service?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system have turbidimeters for each of the filter effluent lines?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Type of Backwash equipment

pumps and surface scour wands for each filter.

Describe the criteria used to determine the need for backwash

1.) Time based to hours; 2.)

and/or when head loss reaches ft., and/or when the finished water turbidity reaches NTU.

What is the average backwash frequency?

Every hours

Describe the backwash procedure (including return to service)

See Attachment D3 for Backwash Procedure

Does the backwash procedure appear to be adequate?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

TREATMENT

Are floor drains present?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is the piping gallery color-coded?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is backwash water recycled?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Calculated Filter Rate gal. / ft² / min.

Is Filter Rate in an acceptable range?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Calculated Backwash Rate gal. / ft² / min. for the wash cycle (gpm); approximately gallons of wash () and gallons of post wash () (stratification) are also used.

Is Backwash Rate in an acceptable range?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Filter media visually appears worn and needs replaced? Media is changed on a year schedule. No sample obtained.

| | | | |
|-----|--------------------------|----|--------------------------|
| Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
|-----|--------------------------|----|--------------------------|

Is treated water properly protected from wastestream backflow/backslphonage?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

CLEARWELL

What is the clearwell volume? Million Gallons

Is the clearwell protected from contamination?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is the clearwell baffled? curtains serve as baffles in the clearwell.

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

DISTRIBUTION SYSTEM

Does the system have accurate and up-to-date distribution mapping?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the mapping show all line, valve, and hydrant locations?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the mapping show pipe sizes and materials?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system maintain a distribution maintenance record?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system maintain a customer complaint record?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Minimum pressure in the system The system has pressure waivers for customers that have less than

Maximum pressure in the system psig

Piping materials/sizes used WVAWC-Kanawha Valley operates approximately miles of distribution piping comprised of sizes ranging from 1/2" to 48".

Does the system flush mains regularly?
The system has blow-offs that are regularly flushed to maintain residuals.

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

How often? year schedule

Does the system exercise valves regularly?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

How often? yrs for and greater, yrs for <

Does the system disinfect all new lines?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system disinfect all repaired lines? *When pressure is lost.*

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system perform bacteriological testing for all new lines?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system perform bacteriological testing for all repaired lines?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system maintain adequate repair materials on-hand?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does the system have a formal Cross-Connection Control Program?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Has the system made inspections for cross-connections?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

FINISHED WATER STORAGE

The finished water tanks included in this section were inspected as representative samples of the system's storage facilities. See Attachment for complete listing of all storage tanks. Most WVAWC tanks are fenced and have motion and security equipment. Security is monitored by plant operators over a system.

#1

Type: Ground Elevated Below ground

Construction material Welded Steel Date of construction 1999

Date of last painting 1999 Date of last inspection 1999

Dimensions ft. Dia. x ft. H Total volume gallons

Base elevation ft. Top elevation ft. (estimated) Overflow elevation ft.

Control type system

High water setting ft. Volume M gallons

Low water setting ft. Volume M gallons

Properly functioning visual level gauge?

| | | |
|-----|-----|----|
| N/A | Yes | No |
|-----|-----|----|

Sampling tap?

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Exterior condition: Good Fair Poor

Interior condition: Unknown Good Fair Poor

Adequately fenced Some vegetation on fence.

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Adequately vented

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Adequate overflow

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Proper access ladder

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Tank lid/manhole secured/locked?

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Valve vault secured/locked?

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

Good site drainage? Some gravel accumulation around tank foundation.

| | | |
|-----|-------------------------------------|----|
| Yes | <input checked="" type="checkbox"/> | No |
|-----|-------------------------------------|----|

FINISHED WATER STORAGE

[Redacted] #2

Type: Ground Elevated Below ground

Construction material Welded Steel Date of construction 1999

Date of last painting 1999 Date of last inspection 1999

Dimensions [Redacted] ft. Dia. [Redacted] ft. H Total volume [Redacted] gallons

Base elevation [Redacted] ft. Top elevation [Redacted] ft. (estimated) Overflow elevation [Redacted] ft.

Control type [Redacted] system

High water setting [Redacted] Volume [Redacted] M gallons

Low water setting [Redacted] Volume [Redacted] M gallons

Properly functioning visual level gauge? Yes No N/A

Sampling tap? Yes No

Exterior condition: *Vegetation present on tank.* Good Fair Poor

Interior condition: Unknown Good Fair Poor

Adequately fenced *Vegetation on fence.* Yes No Adequately vented Yes No

Adequate overflow Yes No Proper access ladder Yes No

Tank lid/manhole secured/locked? Yes No

Valve vault secured/locked? Yes No

Good site drainage? Yes No
Debris around tank ring. Yes No

FINISHED WATER STORAGE

[REDACTED] Tank

Type: Ground Elevated Below ground

Construction material Welded Steel Date of construction 1978

Date of last painting Unknown Date of last inspection 2000

Dimensions [REDACTED] ft. Dia. X [REDACTED] ft. H Total volume [REDACTED] gallons

Base elevation [REDACTED] ft. Top elevation [REDACTED] ft. (estimated) Overflow elevation [REDACTED] ft.

Control type [REDACTED] system

High water setting [REDACTED] ft. Volume [REDACTED] gallons

Low water setting [REDACTED] ft. Volume [REDACTED] gallons

Properly functioning visual level gauge? Yes No

Sampling tap? Yes No

Exterior condition: Mildew on exterior of tank. Good Fair Poor

Interior condition: Unknown Good Fair Poor

Adequately fenced Vegetation on fence. Yes No

Adequately vented Yes No

Adequate overflow No proper splash guard. Yes No

Proper access ladder Yes No

Tank lid/manhole secured/locked? Yes No

Valve vault secured/locked? Yes No

Good site drainage? Grout seal on tank is deteriorated. Yes No

FINISHED WATER STORAGE

Tank

Type: Ground Elevated Below ground

Construction material Welded Steel Date of construction 1961

Date of last painting 1984 Date of last cleaning 1994

Dimensions ft. Dia. x ft. H Total volume gallons

Base elevation ft. Top elevation ft. (estimated) Overflow elevation ft.

Control type system

High water setting ft. Volume gallons

Low water setting ft. Volume gallons

Properly functioning visual level gauge? N/A Yes No

Sampling tap? Yes No

Exterior condition: Unknown Good Fair Poor

Interior condition: Unknown Good Fair Poor

Adequately fenced Yes No
Vegetation on fence.

Adequately vented Yes No

Adequate overflow Yes No

Proper access ladder Yes No

Tank lid/manhole secured/locked? Yes No

Valve vault secured/locked? Yes No

Good site drainage? Yes No

Grout seal on tank is damaged.
Graffiti on tank

PUMPS / PUMP FACILITIES AND CONTROLS

Raw Water Pumps (4) - [redacted] & [redacted] pumps w/ [redacted] & [redacted] Hp GE Motors

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity: [redacted] & [redacted] gpm

P&M schedule? Yes No

Spare available/Duality? Yes No

Properly working? Yes No

Is pump at a booster station (location other than: treatment area, well, or intake)? Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)? N/A Yes No

High Service Pumps (5) [redacted], [redacted], and [redacted] Hp GE Motors

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity: [redacted] gpm, [redacted] gpm, and [redacted] gpm

P&M schedule? Yes No

Spare available/Duality? Yes No

Properly working? Yes No

Is pump at a booster station [redacted] Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)? N/A Yes No

PUMPS / PUMP FACILITIES AND CONTROLS

Filter Backwash Pumps

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity: [REDACTED] gpm

P&M schedule? Yes No

Properly working? Yes No

Spare available/Duality? Yes No

Is pump at a booster station (location other than: treatment area, well, or intake)? Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)? N/A Yes No

The booster stations reviewed during the survey represent a random sampling of the system's pumping facilities. See Attachment for listings of all the system's distribution pumping facilities.

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity: [REDACTED] @ [REDACTED] gpm & [REDACTED] @ [REDACTED] gpm

P&M schedule? Yes No

Properly working? Yes No

Spare available/Duality? Yes No

Is pump at a booster station: [REDACTED] Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)? N/A Yes No

System has a permanent back-up generator.

PUMPS / PUMP FACILITIES AND CONTROLS

[Redacted] [Redacted] [Redacted] Balder

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity unknown

P&M schedule? Yes No

Properly working? Yes No

Spare available/Duality? Yes No

Is pump at a booster station (location other than: treatment area, well, or intake)? Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)? N/A Yes No

[Redacted] [Redacted] hp

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity unknown

P&M schedule? Yes No

Properly working? Yes No

Spare available/Duality? Yes No

Is pump at a booster station [Redacted]? Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)? N/A Yes No

PUMPS / PUMP FACILITIES AND CONTROLS

[Redacted] (@) [Redacted] hp Flowway

Displacement Pump: Reciprocating Rotary Other

Centrifugal Pump: Vertical Turbine Submersible Other

Pump Capacity [Redacted] gpm each

P&M schedule? Yes No

Properly working? Yes No

Spare available/Duality? Yes No

Is pump at a booster station [Redacted] Yes No

Is booster station subject to flooding? N/A Yes No

Is station properly designed/maintained (floor drains, security)?
Roof flashing is starting to deteriorate.
System has a permanent back-up generator.
N/A Yes No

MONITORING / REPORTING / DATA VERIFICATION

Any current violations?

| | | | |
|-----|--|----|-------------------------------------|
| Yes | | No | <input checked="" type="checkbox"/> |
|-----|--|----|-------------------------------------|

If so, list violations N/A

Have all required sampling plans been submitted?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have all Monthly Operational Reports (MOR's) been completed/submitted?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have the MOR's been completed properly?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have all Phase IVV tests been conducted/submitted?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have the Phase IVV tests been conducted properly?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have all bacteriological tests been conducted/submitted?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have the bacteriological tests been conducted properly?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have all Lead and Copper tests been conducted/submitted?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have the Lead and Copper tests been conducted properly?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

System conducting all DBPR testing?

| | | | | | |
|-----|-------------------------------------|----|--|----|--|
| Yes | <input checked="" type="checkbox"/> | No | | NA | |
|-----|-------------------------------------|----|--|----|--|

Have all Public Notices been conducted as required?

| | | | | | |
|-----|--|----|--|----|-------------------------------------|
| Yes | | No | | NA | <input checked="" type="checkbox"/> |
|-----|--|----|--|----|-------------------------------------|

Does the system have proper monitoring equipment?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Is monitoring equipment properly calibrated?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Have any Boil Water Notices been issued since the last sanitary survey?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

If so, list reasons One hundred and ten (110) utility issued BWNs have been issued between January 2010 and December 2012. These have been primarily for line breaks and major leaks.

WATER SYSTEM MANAGEMENT / OPERATION

Are the administrative files up-to-date?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Are files maintained for correct time frames?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Do files contain all required items?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Is personnel adequate to maintain the system?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

See Attachment for a current listing of all WVAWC-Kanawha Valley personnel.

Describe the planning / purchasing process: West Virginia American uses System as a planning and purchasing tool. Five year cash forecasts are prepared for operational expenditures and for capital construction projects; these plans are reviewed and updated annually. A purchase order system is used for all major expenditures. Many employees have P-Cards (with various limits) for the purchase incidentals.

Does system have O&M manuals?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Does system have a SOP?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

SOPs are prepared and maintained for activities covered by the various corporate departments: Water Quality, Production and Plant Operations.

Is system self-supporting?

| | | | |
|-----|-------------------------------------|----|--------------------------|
| Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|-----|-------------------------------------|----|--------------------------|

Income / Revenue for previous year

Total Operating Revenues- \$124,407,814

Expenses for previous year

Total Operating Expenses- \$115,183,426

These figures for revenue and expenditures were taken from the 12/31/2011 PSC Annual Report. They represent the income statement totals for the entire WVAWC system; not for just the Kanawha Valley District. Net income for 2011 was reported as \$9,224,388.

OPERATOR COMPLIANCE WITH STATE REQUIREMENTS

See Attachment for a current listing of all WVAWC-Kanawha Valley certified operators and personnel.

Is number of operators sufficient to operate / maintain system?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

Do operators have proper knowledge to operate / maintain system?

| | | | |
|-----|-------------------------------------|----|--|
| Yes | <input checked="" type="checkbox"/> | No | |
|-----|-------------------------------------|----|--|

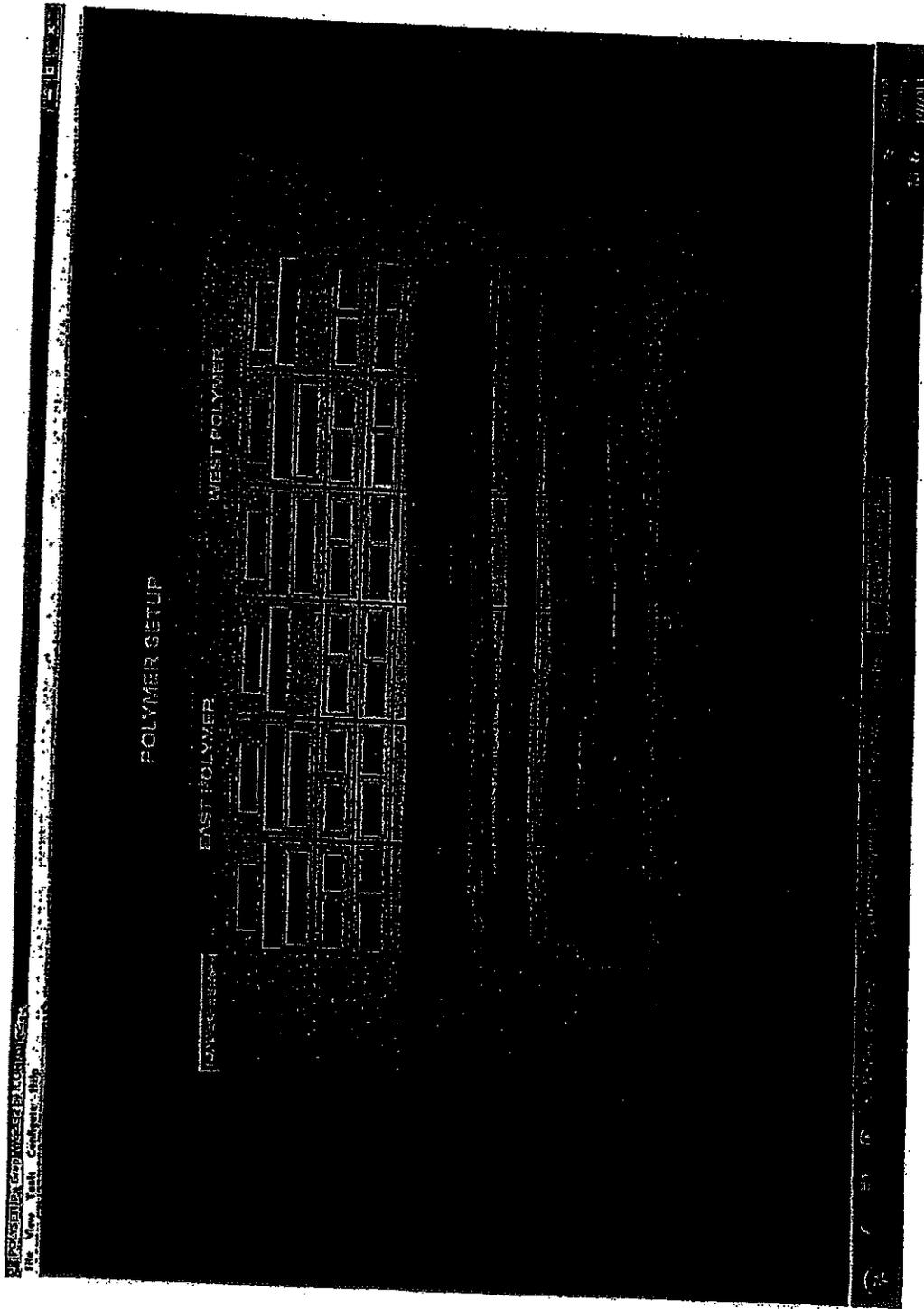
f 7

6 7

| TANK NAME | CITY | MAP NUMBER | LATITUDE | LONGITUDE | YEAR | LAST PART |
|---------------------------|------------------|------------|----------|-----------|------|-----------|
| 1 AIRPORT TANK | CHARLESTON | 102 | | | 1987 | |
| 2 ALLEN | CHARLESTON | 107 | | | 1987 | |
| 3 ALLEN'S ROUTE | CHARLESTON | 102 | | | 1987 | |
| 4 HAGER FORD | MISSONVILLE | 107 | | | 1987 | |
| 5 LAMBERT | MISSONVILLE | 98 | | | 1987 | |
| 6 LAMBERT HILL NO. 1 | ST. ALVA | 81 | | | 1987 | |
| 6 LAMBERT HILL NO. 2 | MISSONVILLE | 81 | | | 1987 | |
| 7 LAMBERT HEIGHTS | CHARLESTON | 191 | | | 1987 | |
| 8 BALD HORN (LATER CREEK) | CHARLESTON | 179 | | | 1987 | |
| 9 BARRETT | BALD HORN | 179 | | | 1987 | |
| 10 BARCON RIDGE | BARRETT | 252 | | | 2001 | |
| 11 BELLE | CHARLESTON | 80 | | | 2001 | |
| 12 BERRY HILLS | BELLE | 493 | | | 1987 | |
| 13 BLOUNT | CHARLESTON | 608 | | | 1987 | |
| 14 BRYAN HILL | CAMPBELLS CREEK | 198 | | | 1987 | |
| 15 BRYANWOOD | CHARLESTON | 117 | | | 1987 | |
| 16 CANNON (LATER) | CHARLESTON | 150 | | | 1987 | |
| 17 CHARLESTON #2 | CHARLESTON | 154 | | | 1987 | |
| 18 CHARLESTON HOLLOW | CHARLESTON | 508 | | | 1987 | |
| 19 CHARLYAN | KANAWHA CITY | 180 | | | 1987 | |
| 20 CHARLESTON STREET | CHARLYAN | 173 | | | 1987 | |
| 21 CHAMBERS MOUNTAIN | SOUTH CHARLESTON | 483 | | | 1987 | |
| 22 CHARLESTON HILLS | CHARLESTON | 66 | | | 1987 | |
| 23 CHARLESTON HEIGHTS | CHARLESTON | 66 | | | 1987 | |
| 24 CHARLESTON #1 | MISSONVILLE | 41 | | | 2000 | |
| 25 CHARLESTON #2 | CHARLESTON | 100 | | | 2001 | |
| 26 CHARLESTON #3 | CHARLESTON | 760 | | | 1978 | |
| 27 CHARLESTON | BALD HORN | 38 | | | 1978 | |
| 28 CHARLESTON RIDGE | CHARLESTON | 38 | | | 1983 | |
| 29 CROSS LANE | PARADISE | 100 | | | 1983 | |
| 30 CULLOCH | CROSS LANE | 314 | | | 1987 | |
| 31 CULLOCH CREEK | CULLOCH | 499 | | | 1987 | |
| 32 CULLOCH HOLLOW (LATER) | CHARLESTON | 9 | | | 1983 | |
| 33 DANBY (W. CHAMBERLAIN) | KANAWHA CITY | 600 | | | 1983 | |
| 34 DITCH RIDGE | CHUCK | 118 | | | 1987 | |
| 35 DODD FORD | CHARLESTON | 138 | | | 2008 | |
| 36 DODD FORD | CHARLESTON | 173 | | | 2008 | |
| 37 DODD FORD | CHARLESTON | 148 | | | 1988 | |
| 38 DODD FORD HILLS | CHARLESTON | 101 | | | 1982 | |
| 39 DODD FORD ROAD | CHARLESTON | 184 | | | 1988 | |
| 40 DODD FORD TRAIL | CHARLESTON | 182 | | | 1988 | |
| 41 DODD FORD UPPER | CHARLESTON | 87 | | | 1984 | |
| 42 DODD FORD YAN FORD | CHARLESTON | 180 | | | 1984 | |
| 43 DODD FORD | CHARLESTON | 10 | | | 1984 | |
| 44 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 45 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 46 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 47 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 48 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 49 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 50 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 51 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 52 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 53 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 54 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 55 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 56 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 57 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 58 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 59 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 60 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 61 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 62 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 63 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 64 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 65 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 66 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 67 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 68 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 69 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 70 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 71 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 72 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 73 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 74 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 75 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 76 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 77 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 78 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 79 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 80 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 81 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 82 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 83 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 84 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 85 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 86 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 87 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 88 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 89 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 90 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 91 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 92 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 93 DODD FORD | CHARLESTON | 87 | | | 1984 | |
| 94 DODD FORD | CHARLESTON | 180 | | | 1984 | |
| 95 DODD FORD | CHARLESTON | 182 | | | 1984 | |
| 96 DODD FORD | CHARLESTON | 184 | | | 1984 | |
| 97 DODD FORD | CHARLESTON | 101 | | | 1982 | |
| 98 DODD FORD | CHARLESTON | 184 | | | 1988 | |
| 99 DODD FORD | CHARLESTON | 182 | | | 1988 | |
| 100 DODD FORD | CHARLESTON | 87 | | | 1984 | |

| | | | | | | |
|---|-------|-------------------|--|-------|-------|-------|
| 78 SHREWSBURY | 213 | SHREWSBURY | | 1982 | 1982 | 2005 |
| 79 SOUTH CHARLESTON RESERVOIR | 1,000 | SOUTH CHARLESTON | | na | na | na |
| 80 SOUTH OAKRIDGE | 227 | CHARLESTON | | 1989 | 1994 | 2000 |
| 81 SOUTH PARK #1 | 148 | CHARLESTON | | 1984 | 1998 | 1998 |
| 82 SOUTH PARK #2 | 101 | CHARLESTON | | 1972 | 1983 | 1984 |
| 83 SPRING FORK | 5 | CAMPBELL'S CREEK | | 1985 | 1986 | 1986 |
| 84 STADIUM VIEW | 2,891 | CHARLESTON | | 1948 | 1953 | 1984 |
| 85 THORFARE ROAD (BIG SANDY) | unkn. | CLENDENIN | | unkn. | unkn. | 2004 |
| 86 TORNADO (WASHINGTON PSD) | 89 | TORNADO | | 1976 | 1998 | 2000 |
| 87 TURPERS CREEK (SISSONVILLE PSD) | 274 | SISSONVILLE | | 1984 | 1992 | 2000 |
| 88 UPPER FRAME | 150 | ELKVIEW | | 2005 | 2005 | 2005 |
| 89 VAN | 154 | VAN | | 1975 | 2005 | 2005 |
| 90 VANDALIA #1 (PART OF PROP WAS SOLD TO DCH) | 2,980 | CHARLESTON | | 1987 | 1988 | 1988 |
| 91 VANDALIA #2 (PART OF PROP WAS SOLD TO DCH) | 3,662 | CHARLESTON | | 1983 | 2005 | 2005 |
| 92 VORPE ROAD | 25 | ST. ALBANS | | 1978 | 1978 | 1985 |
| 93 WALKER RIDGE (Mt. Ridge) | 330 | LEON | | 2010 | 2010 | 2010 |
| 94 WASHINGTON HEIGHTS | 202 | CHARLESTON | | 1978 | 1978 | 2003 |
| 95 WEST | 4,769 | DUNBAR | | 1972 | 1990 | 2000 |
| 96 WEST FORK #1 | 110 | BANDYTOWN | | 1983 | unkn. | 2000 |
| 97 WEST FORK #2 | 78 | TWILIGHT | | 1983 | unkn. | 2000 |
| 98 WEST UNION | 8 | CLENDENIN | | 1980 | 1990 | unkn. |
| 99 WESTMORELAND (CIVIL ACTION #874) | 101 | DUNBAR | | 1971 | 1983 | 1984 |
| 100 WILLIAMS MOUNTAIN | 90 | WILLIAMS MOUNTAIN | | 1978 | unkn. | 2000 |
| 101 WILLS CREEK | 250 | ELKVIEW | | 2001 | 2001 | 2001 |
| 102 WOODRUM LANE #1 | 5 | CHARLESTON | | 1953 | 1988 | 1985 |
| 103 WOODRUM LANE #2 | 10 | CHARLESTON | | 1984 | 1988 | 1985 |
| 104 YOUNGS BOTTOM | 263 | FALLING ROCK | | 1986 | 1988 | 1988 |
| RIVERSIDE SYSTEM | | | | | | |
| RIVERSIDE | 102 | RIVERSIDE | | 1982 | | |
| QUEEN #2045 PSD | | | | | | |

| NEXT DEP. | DIMENSIONS | | ELEVATIONS | |
|--------------|-------------|-----------------|----------------|----------------|
| | DIAM. FT | HEIGHT IN FT | BASE (INCH) | C.F. (INCH) |
| 2004 | 35.0 | 41.5 | | |
| 2006 | 22.0 | 34.0 | | |
| 2007 | 31.0 | 19.0 | | |
| 2007 | 27.0 | 22.0 | | |
| Paint | 24.0 | 24.0 | | |
| 2007 | 37.0 | 24.0 | | |
| Paint | 22.0 | 46.0 | | |
| 2008 | 26.0 | 29.0 | | |
| 2008 | 35.0 | 26.0 | | |
| 2005 | 17.0 | 29.0 | | |
| 2007 | 54.0 | 39.0 | | |
| Paint | 46.0 | 39.0 | | |
| | 39.0 | 31.0 | | |
| 2005 | 21.0 | 48.0 | | |
| 2007 | 27.0 | 26.0 | | |
| 2005 | 30.0 | 31.0 | | |
| 2004 | 48.0 | 37.0 | | |
| 2007 | 31.0 | 28.0 | | |
| 2004 | 25.0 | 47.0 | | |
| Paint | 42.0 | 49.0 | | |
| 2005 | 26.0 | 51.0 | | |
| | 20.0 | 29.0 | | |
| 2009 | 10.0 | 70.0 | | |
| | 27.0 | 22.0 | | |
| | 67.0 | 27.0 | | |
| 2006 | 30.0 | 22.0 | | |
| 2009 | 11.0 | 26.0 | | |
| 2004 | 21.0 | 41.0 | | |
| 2004 | 48.0 | 26.0 | | |
| 2004 | 50.0 | 24.0 | | |
| 2009 | 30.0 | 30.0 | | |
| Paint | 8.0 | 9.0 | | |
| 2006 | 48.0 | 36.0 | | |
| | 27.0 | 27.0 | | |
| | 24.0 | 40.0 | | |
| 2007 | 23.0 | 27.0 | | |
| 2004 | 27.0 | 34.0 | | |
| Paint | 18.0 | 53.0 | | |
| 2005 | 35.0 | 27.0 | | |
| 2005 | 31.0 | 27.0 | | |
| 2004 | 31.5 | 11.5 | | |
| 2004 | 9.0 | 20.0 | | |
| Paint | 20.0 | 27.0 | | |
| Paint | 25.0 | 72.0 | | |
| 2004 | 31.0 | 20.0 | | |
| 2006 | 8.0 | 16.0 | | |
| Paint | 25.0 | 70.0 | | |
| 2010 | | 60.0 | | |
| 2007 | 23.0 | 23.0 | | |
| 2005 | 24.0 | 11.0 | | |
| 2005 | 28.0 | 40.0 | | |
| 2007 | 20.0 | 23.0 | | |
| 2009 | 20.0 | 20.0 | | |
| 2009 | 20.0 | 31.0 | | |
| 2009 | 20.0 | 20.0 | | |
| 2009 | 20.0 | 20.0 | | |
| 2004 | 23.5 | 47.0 | | |
| 2008 | 20.0 | 26.0 | | |
| 2004 | 28.0 | 29.0 | | |
| 2007 | 24.0 | 40.0 | | |
| Paint | 20.0 | 44.0 | | |
| Paint | 66.0 | 29.0 | | |
| Paint | 28.0 | 48.0 | | |
| 2007 | 28.0 | 52.0 | | |
| 2004 | 70.0 | 28.0 | | |
| 2004 | 23.0 | 66.0 | | |
| 2016 | 20.0 | 26.0 | | |
| Paint | 60.0 | 52.0 | | |
| 2005 | 51.0 | 49.0 | | |
| Paint | 43.0 | 24.0 | | |
| 2010 | 27.0 | 23.0 | | |
| 2008 | 31.0 | 34.0 | | |
| 2007 | 25.0 | 120.0 | | |
| Paint | 31.0 | 26.0 | | |
| 2007 | 30.0 | 23.0 | | |
| | 27.0 | 24.0 | | |



POLYMER SETUP

EAST POLYMER

WEST POLYMER

Attachment 6: T 0112
Typical Plant Current Screen
WAWWC Kanabha Valley - Southby Survey
January 8, 2015

KV Rechlorination Sites

| Install Data | Pump Station Normal Flow | Max Capacity Feed Rate | Summer Feed Rate | | Winter Feed Rate | | Summer Desired |
|--|--------------------------|------------------------|------------------|--------|------------------|--------|----------------|
| | | | lb/day | lb/day | lb/day | lb/day | |
| 2010 TABLET FEEDERS - 100% Station | 250 | 24 | 8 | 8 | 2 | 2 | 3 |
| 2010 (resubbed from 2009) | 100 | 24 | 3 | 3 | 1.5 | 1.5 | 3 |
| 2009 (runs once / 3 days) | 110 | 13.7 | 2.5 | 2.5 | Off | Off | 2.6 |
| 2011 Creek | 250 | 24 | 8 | 8 | 2 | 2 | 2.5 |
| 2001 Creek | 370 | 10 | 8 | 8 | 2 | 2 | 3.3 |
| 2005 Road | 275 | 10 | 4 | 4 | 0.5 | 0.5 | 3 |
| 2000 (gas switchover) | 1500 | 25 | 23 | 23 | 8 | 8 | 3.1 |
| 1990 | 215 | 10 | 3.5 | 3.5 | Off | Off | 3.1 |
| 2001 | 120 | 10 | 2.5 | 2.5 | 0.75 | 0.75 | 3.7 |
| 2000 | 225 | 12 | 3.5 | 3.5 | Off | Off | 2.8 |

Standard Operating Procedure: Filtration

It is very important that the Kanawha Valley Plant maintain and operate in a proper manner to maintain optimum efficiency. This requires a more diligent approach to how filters are backwashed. When problems occur with the filters, supervision needs to be notified immediately of any problems noticed with the filters.

We want the operators to take the opportunity (at least once per shift) to initiate a filter backwash either in manual or automatic, preferably manual. The operator should be available to watch the entire backwash cycle. During the backwash the operators should make notations as to the condition of the filters. A clipboard with worksheet will be hanging in the operator's control room.

What to Look For?:

- Do all the valves work properly?
- Are the surface sweeps attached?
- Do the surface sweep turn at a constant speed?
- Did the filter backwash evenly? The best way to check this is to note whether or not the filters overflow the troughs at approximately the same time.
- Does the backwash flows through each side of the filter banks look the same?
- At the end of the high wash cycle, does the filter look clean? At the end of a proper back wash, the operator should notice more floc and less mud (marbling) carrying over into the troughs.
- Did filter turbidity levels come back to normal within 15 to 30 minutes?

What the Operator Can Do?:

The operator is empowered to make a number of decisions regarding the backwashing of filters. Based on how the filter backwashes the operator should make a number of decisions.

- Increase the time of low wash and increase the time the surface sweeps run.
- Increase the high wash backwash rate.
- Increase the high wash Backwash time.

ATTACHEMNT D3 - 1 of 3
Backwash Procedure
WVAWC - Kanawha Valley Sanitary Survey
November 20, 2012

- Backwash in manual. If a particular filter is extremely dirty, it is recommended that the operator take the filter down through the bottom before initiating backwash, thus allowing air to help scour the filter media. This would also be a good time to extend the high wash time to allow the extra mud to be removed from the filter.
- Decrease the time between backwash cycles. This would be recommended prior to and after a major rain/raw turbidity event.
- Using fire hose/water hose, hose down the sides of the filter during backwash cycles if there is build-up on the filter walls
- Never put a filter back in surface unless all steps in a filter backwash are complete. If the SCADA system stops the program (auto only) in the middle of a backwash, the filter should be washed manually prior to putting back into service.

Note: It is important that all problems be reported by the operators and that all problems are addressed as promptly as possible.

Filter Backwash Steps

1. Close Influent valve.
2. Once water has dropped even to the level of the troughs, close the Effluent valve.
3. Open Drain valve.
4. Turn backwash pumps on.
5. Turn on surface sweeps. Allow sweeps to operate for roughly 2 -3 minutes; more if filter is very dirty.
6. Open backwash valve to low flow. 8,000 gpm
7. Turn off surface sweeps.
8. Open backwash valve to high flow, roughly 16,000 -17,000 gpm. Allow to run at least 5 minutes.
9. Close backwash valve down to low flow, roughly 8,000 to 10,000 gpm. Allow to run at least 5 minutes or until dirty water or scum has been removed from top of water.
10. Close backwash valve completely.
11. Turn off backwash pumps.
12. Open Influent valve.
13. Open filter to waste valve. Once trough is washed, close drain valve.
14. Once filter NTU drops below 0.15 NTU, close filter to waste and open Effluent valve.
15. Check that all valves settings are in the proper position for normal operations.

ATTACHEMNT D3 - 2 of 3
Backwash Procedure
WVAWC - Kanawha Valley Sanitary Survey
November 20, 2012

Filter Inspections:

Periodic inspections of the filters is necessary to insure that filters are being maintained and operated properly. Filters should be inspected quarterly. There are several things to look for when inspecting a filter or even when the filter is down for maintenance.

- Are mud balls present on top of the filter media? In the media? What is the size and location of the mudballs?
- Check freeboard on each of the filter banks. At least 3 measurements should be taken per each bank (front,middle,back)
- Is media pulling away from the walls of the filter. This could be a problem with the drain, a dead spot in the filter where washing is ineffective or cold weather related.
- Are there cracks in the media? This is indicative of underdrain failure.
- Are there any raised places in the media? This is indicative of a disturbance in the underdrain.
- Check conditions of surface sweep fittings, nozzles and brackets. Look for signs of corrosion, wear in the couplings and movement in the piping.
- At least 1 sample per filter should be collected annually and sent in for analysis by the supplier.
- When putting the filter back in service does the backwash water flow evenly?
- Measure the filter bed expansion.
- Loss of head meters should be checked for any needed maintenance.
- Filter turbidimeters should be cleaned and checked after putting the filter back in service.
- Avoid having filters out of service for more than 24 hours.
- Keep accurate up to date records of filter inspections for historical use.

ATTACHEMNT D3 - 3 of 3
Backwash Procedure
WVAWC - Kanawha Valley Sanitary Survey
November 20, 2012

WVAW

Jeffrey McIntyre
Vanessa Turner
Sean Graves
Philip Bright
David Bowles
Brett Morgan
David Carovillano
Jeremy Spence
Billie Suder
Andrea Thomas
Lisa Weber
Mike Shank
Sarah Workman
Melinda Young
Laura Jordan
Dan Bickerton
Dean Van Horne
Vacant
Judy Judy

President - WV
Administrative Assistant
Director of Operations
Manager NRW
Supervisor NRW
Manager Engineering
Senior Engineer
Drafter/CAD
Manager Water Quality
ORM Senior Specialist
Administrative Assistant
Senior SCADA Engineer
Supervisor - Administrative Support
Specialist Operations
Manager External Affairs
Director of Business Development
Manager Finance
Human Resource Specialist
Legal Secretary

Kanawha Valley District

Production & Water Quality

Jon Jarvis
Joe Sisson
Tod Reedy
Mike "Bubba" Bowles
Brian Sizemore
Jeff Baldwin
Tim Cummings
Greg Ferrell
Sandy Nelson
Jon Martin
Bill Jordan

Supervisor Water Quality - Chief Operator
Supervisor Production
Maintenance Serv. Specialist
Maintenance Serv. Specialist
Maintenance Serv. Specialist
Booster Technician
Booster Technician
Booster Technician
Administrative Assistant
SCADA (Statewide)
SCADA (Statewide)

Field Operations

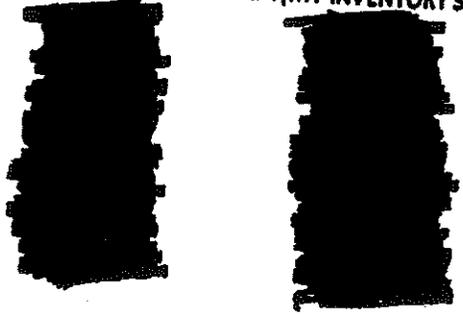
Tommy Boggs
Jeffrey Ferrell
David Holstein
Bob Weiford
William "Butch" Templeton
Henry Perkins
Ken Marcum
Jana Lilly
Janet Messer
Peggy Hall
Trena Adkins

Supervisor Construction
Supt Field Operations - Chief Operator for Field
Supervisor Field Operations - Boone Cnty
Supervisor Field Operations - Dist. West
Supervisor Field Operations - Dist. East
Supervisor Field Operations - Commercial
Supervisor Field Operations - Meter Readers
Administrative Assistant
Administrative Assistant
Administrative Assistant
Operations Specialist

Attachment G2
Administrative Staff
WVAWC - Kanawha Valley Sanitary Survey

BOOSTER STATIONS IN WVAWC INVENTORY AND NOT IN SWIFT(MY INVENTORY SYSTEM) TO BE ADDED

Pocatalico
 Brenda Lane
 Dutch Ridge
 Walker Ridge Booster
 Woods Drive
 Haws Dr.
 Allen
 Cromwell Estates



BOOSTER STATIONS IN SWIFT BY NOT IN WVAWC INVENTORY - TO BE CHANGED TO INACTIVE STATUS IN

Whittington Hill Booster Station
 Hawes Hollow Booster Station. - Is this Haws Drive? Number 75?
 Kelly Hill booster
 Airport Booster

STORAGE TANKS IN WVAWC INVENTORY AND NOT IN SWIFT(MY INVENTORY SYSTEM)

| | | | |
|-----------------|-----|------------|------------|
| [REDACTED] TANK | 300 | CHARLESTON | [REDACTED] |
| [REDACTED] | 115 | QUICK | [REDACTED] |
| [REDACTED] | 135 | CHARLESTON | [REDACTED] |
| [REDACTED] | 150 | ELKVIEW | [REDACTED] |
| [REDACTED] | 130 | LEON | [REDACTED] |

STORAGE TANKS IN SWIFT BY NOT IN WVAWC INVENTORY - TO BE CHANGED TO INACTIVE STATUS IN SW

[REDACTED]
 [REDACTED]
 [REDACTED] Tank
 [REDACTED] Tank
 [REDACTED] Tank
 [REDACTED] Tank

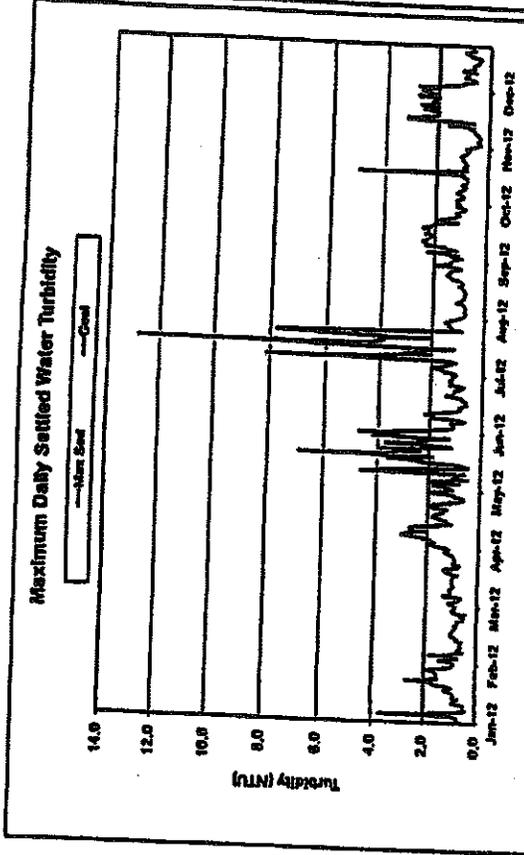
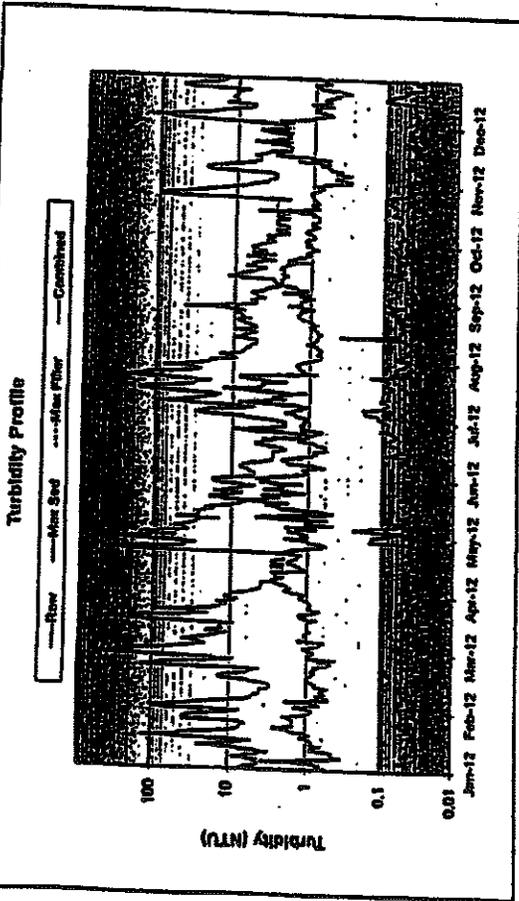
TO SWIFT

SWIFT



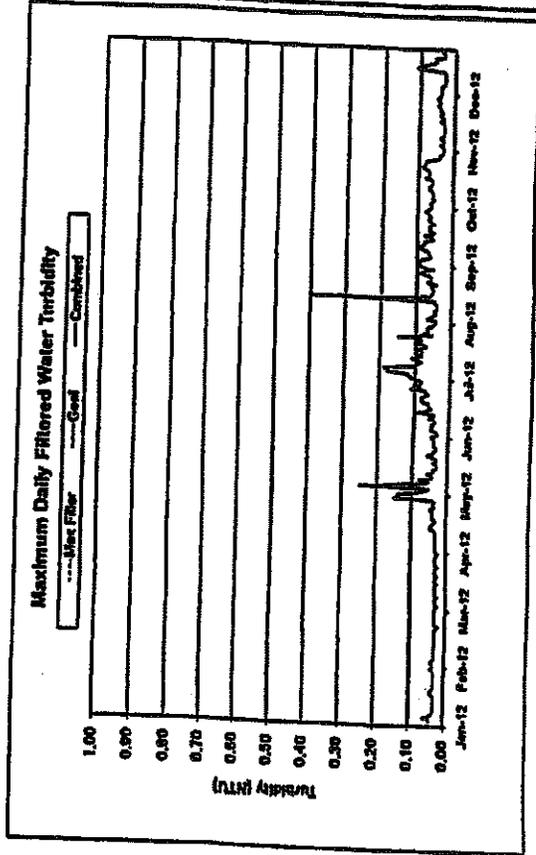
/IFT

Treatment Barrier Performance Summary



| ANNUAL DATA | Avg | Min | Max | 95% | Opt. Goal | Pass |
|-----------------------------|------|------|------|------|-----------|----------|
| | RTU | RTU | RTU | RTU | % Values | % Values |
| Raw Turbidity | ████ | ████ | ████ | ████ | ████ | ████ |
| Max. Settled Turbidity | ████ | ████ | ████ | ████ | ████ | ████ |
| Max. Filtered Turbidity | ████ | ████ | ████ | ████ | ████ | ████ |
| Combined Filtered Turbidity | ████ | ████ | ████ | ████ | ████ | ████ |

R90 = Correlation Coefficient for two selected data sets
 95% = 95th Percentile value for data set
 Opt. Goal = % of values in data set that are less than or equal to the selected optimization turbidity goal
 Reg. = % of values in data set that are less than or equal to the regulated turbidity requirement

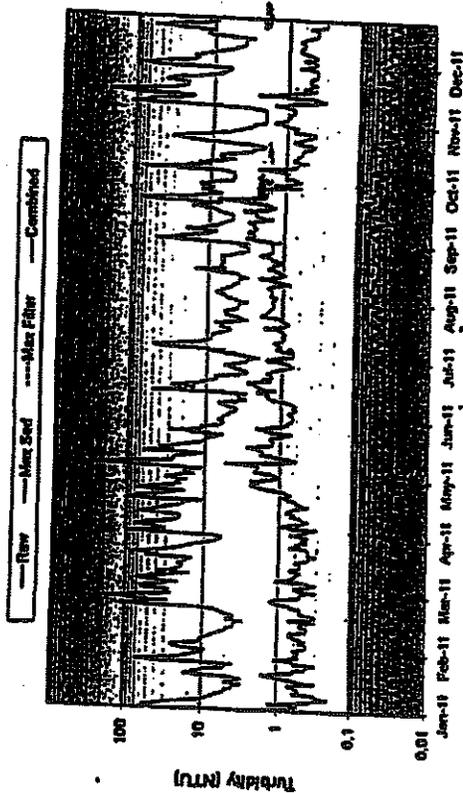


Attachment D1: 3 of 3
 Typical Plant Control Screen
 WVAVC Kanawha Valley - Sanitary Survey
 January 8, 2013

WVAWC-Kanawha Valley

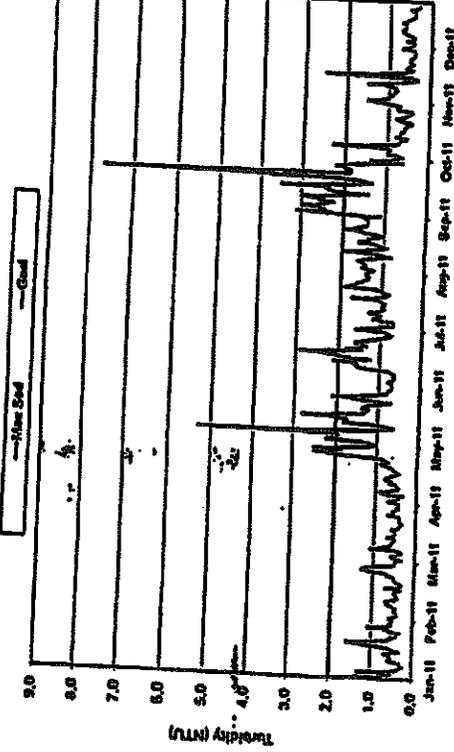
15, 2013

Turbidity Profile

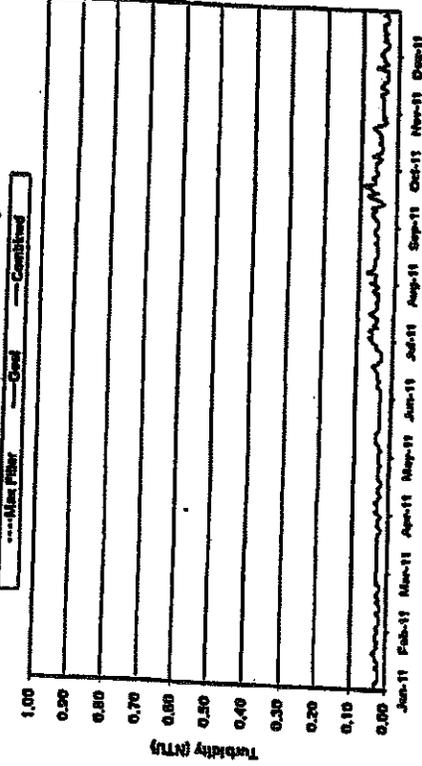


Treatment Barrier Performance Summary

Maximum Daily Settled Water Turbidity



Maximum Daily Filtered Water Turbidity



| ANNUAL DATA | Avg | | Min | | Max | | RSQ | | 95% | | Opt. Goal | | Resp. |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|-----------|----------|-------|
| | RTU | NTU | RTU | NTU | RTU | NTU | RTU | NTU | RTU | % Values | % Values | % Values | |
| Raw Turbidity | | | | | | | | | | | | | |
| Max. Settled Turbidity | | | | | | | | | | | | | |
| Max. Filtered Turbidity | | | | | | | | | | | | | |
| Combined Filtered Turbidity | | | | | | | | | | | | | |

RSQ = Correlation Coefficient for two selected data sets

95% = 95th Percentile value for data set

Opt. Goal = % of values in data set that are less than or equal to the selected optimization turbidity goal

Resp. = % of values in data set that are less than or equal to the regulated turbidity requirement

Attachment D1: 2 of 3
 Typical Plant Control Screen
 WVAWC Kanawha Valley - Sanitary Survey
 January 8, 2013

**WATER ANALYSIS REPORT
SAINT ALBANS DISTRICT LABORATORY**

| | | | |
|---|---|----------------------------|----------------------------|
| WATER SUPPLY | <u>WVAWC-Kanawha Valley</u> | PWSID # | <u>[REDACTED]</u> |
| ADDRESS | <u>P.O. Box 1906</u> | COUNTY | <u>Kanawha</u> |
| | <u>Charleston, WV 25327-1906</u> | DATE OF ANALYSIS | <u>1/8/2013</u> |
| COLLECTED BY | <u>Richard Snyder</u> | DATE OF COLLECTION | <u>1/11/2013</u> |
| <input type="checkbox"/> FINISHED WATER | <input checked="" type="checkbox"/> RAW WATER | TIME OF COLLECTION | <u>1:00 p.m.</u> |
| | | POINT OF COLLECTION | <u>Plant raw water tap</u> |

SECONDARY STANDARDS AND MISCELLANEOUS PARAMETERS

| | | |
|---|---------------|-------|
| Alkalinity (PHTH) (as CaCO ₃) (mg/l) | --- | --- |
| Alkalinity (M.O.) (as CaCO ₃) (mg/l) | 32 | 20 |
| Calcium Hardness (as CaCO ₃) (mg/l) | --- | --- |
| Total Hardness (as CaCO ₃) (mg/l) | 66 | 56 |
| pH (std. units) | 7.7 E / 7.3 W | 7.3 |
| *Turbidity (0.5 NTU) | | --- |
| *Iron (0.3) (mg/l) | 0.079 | 0.09 |
| *Manganese (0.05) (mg/l) | 0.029 | 0.035 |
| TDS (mg/l) | --- | --- |
| Temperature (°C) | --- | --- |
| LSI (0 = ideal, <0 = corrosive, >0 = scaling) | --- | --- |
| Chlorine Residual (mg/l) <input type="checkbox"/> free <input type="checkbox"/> total | --- | --- |
| Other Fluoride (mg/l) | --- | 0.10 |

Remarks: Iron not digested prior to testing.

Analyst Richard Snyder

*Maximum Desirable Concentrations Are Shown in Parenthesis.

SAINT ALBANS DISTRICT LABORATORY
808 "B" STREET, SUITE G
ST. ALBANS, WV 25177
(304) 722-0611

Attachment H1
Raw Water Analysis
WVAWC-Kanawha Valley Sanitary Survey
January 8, 2013

**WATER ANALYSIS REPORT
SAINT ALBANS DISTRICT LABORATORY**

| | | | |
|--|------------------------------------|---------------------|-----------------------|
| WATER SUPPLY | <u>WVAWC-Kanawha Valley</u> | PWSID # | <u>[REDACTED]</u> |
| ADDRESS | <u>P.O. Box 1906</u> | COUNTY | <u>Kanawha</u> |
| | <u>Charleston, WV 25327-1906</u> | DATE OF ANALYSIS | <u>1/11/2013</u> |
| COLLECTED BY | <u>Richard Snyder</u> | DATE OF COLLECTION | <u>1/8/2013</u> |
| <input checked="" type="checkbox"/> FINISHED WATER | <input type="checkbox"/> RAW WATER | TIME OF COLLECTION | <u>1:00 p.m.</u> |
| | | POINT OF COLLECTION | <u>Plant lab sink</u> |

SECONDARY STANDARDS AND MISCELLANEOUS PARAMETERS

| Parameter | WVAWC-2013 (0.00-1.00) | WVAWC-2013 (0.00-1.00) |
|--|---------------------------|---------------------------|
| Alkalinity (PHTH) (as CaCO ₃) (mg/l) | --- | --- |
| Alkalinity (M.O.) (as CaCO ₃) (mg/l) | 36 | 14 |
| Calcium Hardness (as CaCO ₃) (mg/l) | | |
| Total Hardness (as CaCO ₃) (mg/l) | 78 | 56 |
| pH (std. units) | 7.7 W / 7.3 E | 7.2 |
| *Turbidity (0.5 NTU) | 0.026 | --- |
| *Iron (0.3) (mg/l) | .0002 | <0.01 |
| *Manganese (0.05) (mg/l) | 0.003 | 0.009 |
| TDS (mg/l) | --- | --- |
| Temperature (°C) | --- | --- |
| LSI (0 = ideal, <0 = corrosive, >0 = scaling) | --- | --- |
| Chlorine Residual (mg/l) <input checked="" type="checkbox"/> free <input type="checkbox"/> total | 2.19 | 1.7** |
| Other Fluoride (mg/l) | 0.90 | 0.70 |

Remarks: *Iron not digested prior to testing.*

Analyst

Richard Snyder

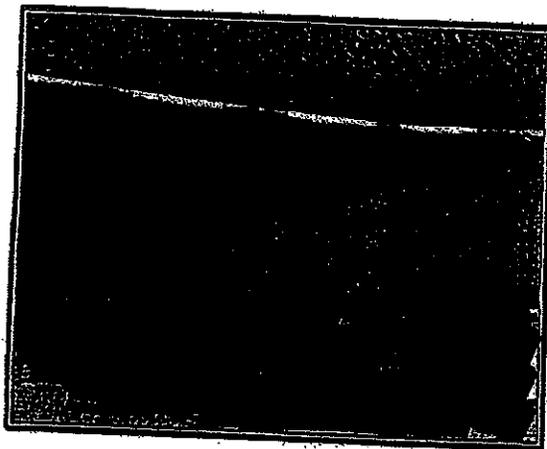
*Maximum Desirable Concentrations Are Shown in Parenthesis.

**Analyzed 1-11-2013

SAINT ALBANS DISTRICT LABORATORY

808 "B" STREET, SUITE G
ST. ALBANS, WV 25177
(304) 722-0611

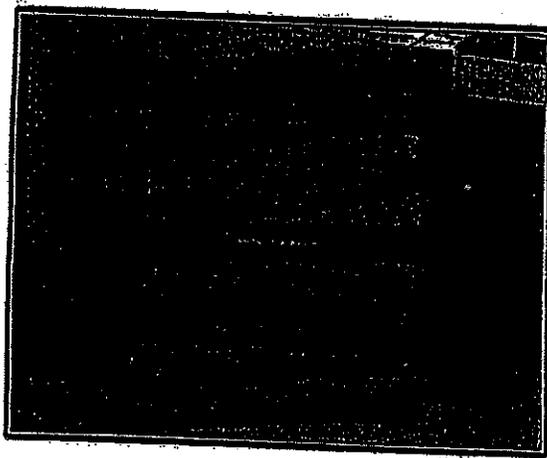
Attachment H2
Finished Water Analysis
WVAWC-Kanawha Valley Sanitary Survey
January 8, 2013



Raw Water Inlet



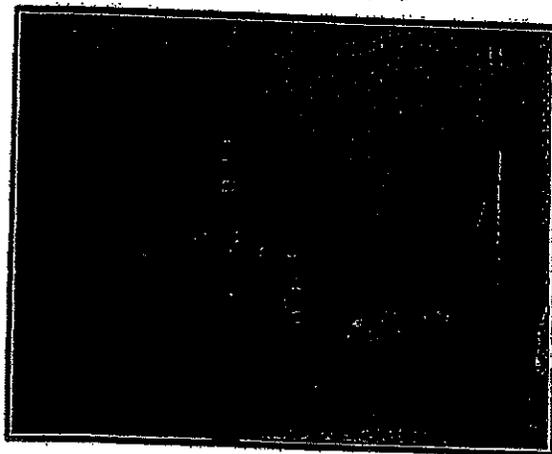
Raw Water Inlet Initial Screen



Raw Water Initial Filter



Raw Water Pumps

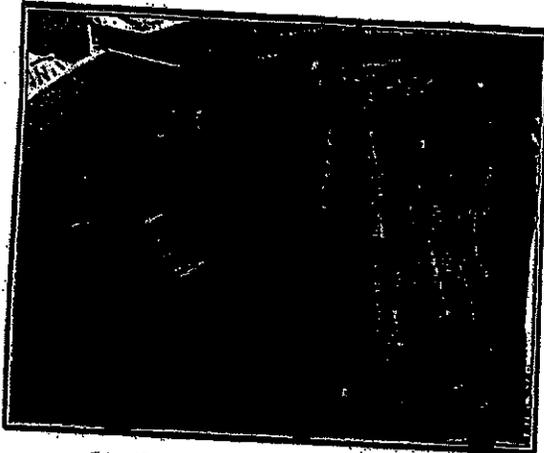


Raw Water Addition



Tube Settlers

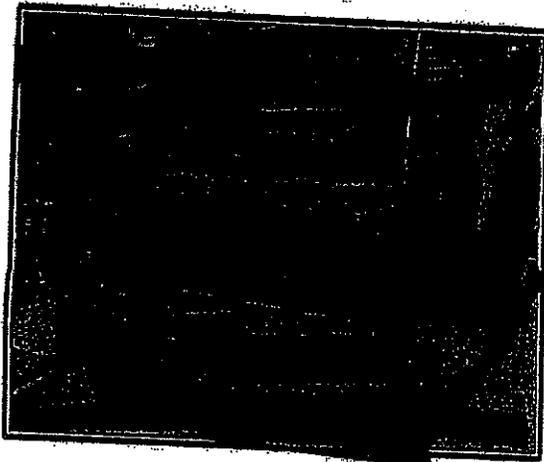
ATTACHEMNT I1
Photos
WYAWC - Kanawha Valley Sanitary Survey
November 20, 2012



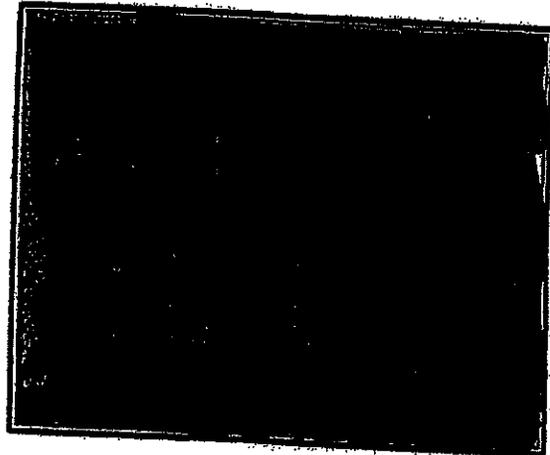
Clarifier Center Sludge



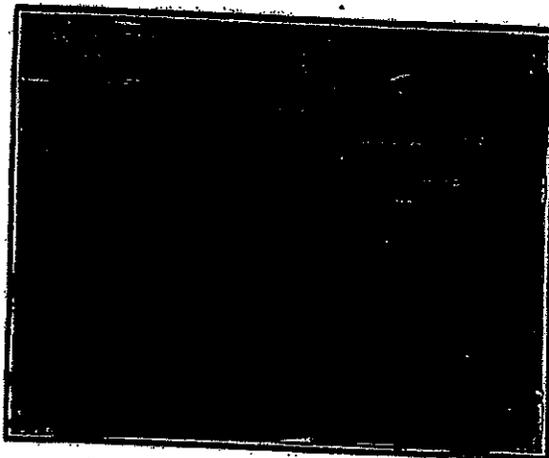
Sludge Thickener Clarifier



Sludge Press



Rapid Mix Basin



Filter Room

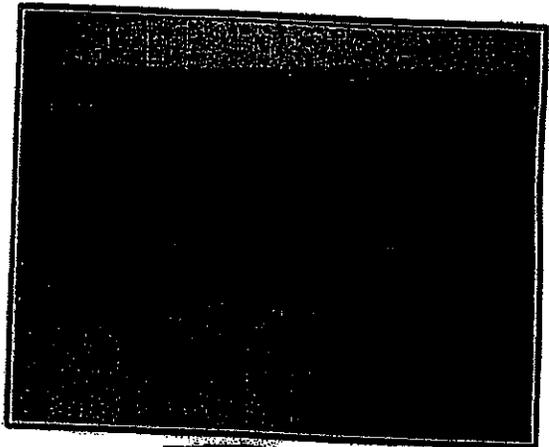


Filter Outlet Addition

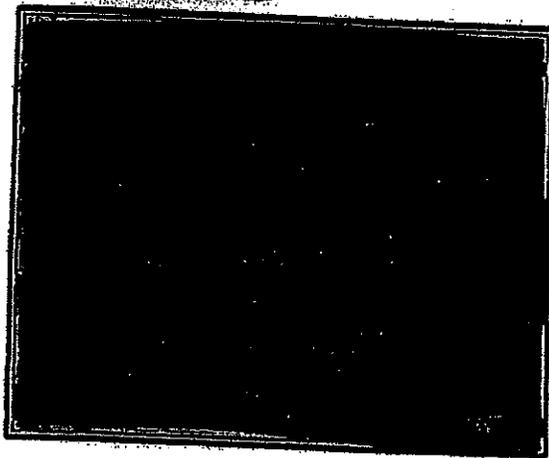
ATTACHEMNT 12
Photos
WVAWC – Kanawha Valley Sanitary Survey
November 20, 2012



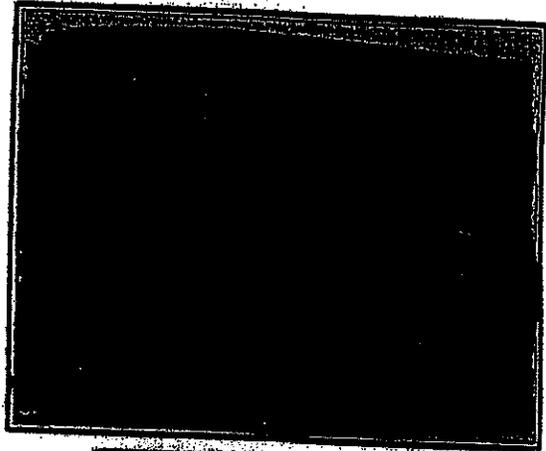
[Redacted] Addition



[Redacted] Feeders



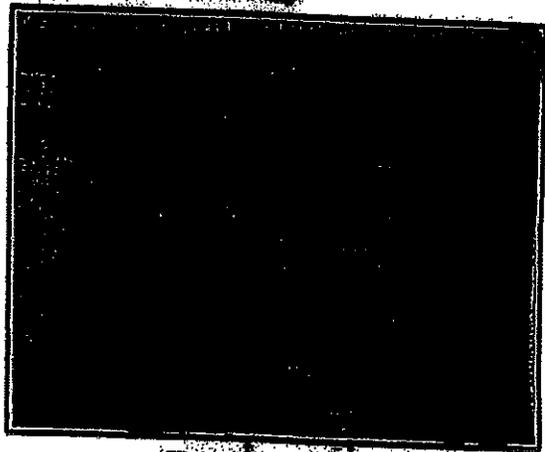
[Redacted] Analysis at Clearwell Inlet



[Redacted] Meter Set-Up

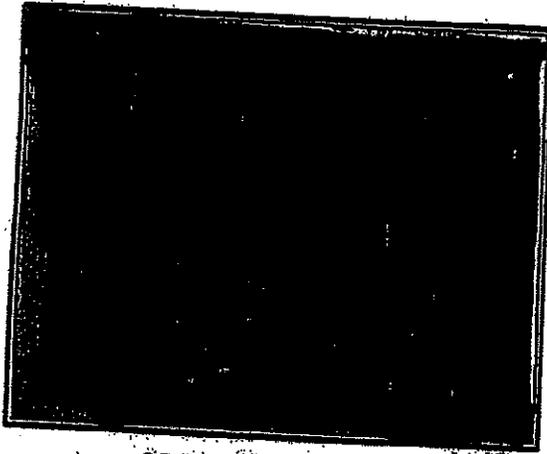


[Redacted] Day Tanks

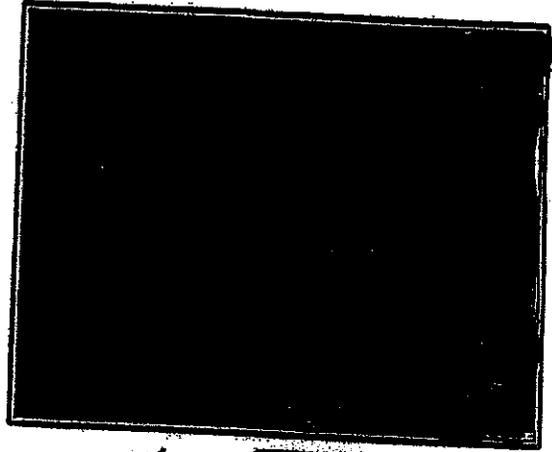


[Redacted] Tank

ATTACHEMNT 13
Photos
WVAWC - Kanawha Valley Sanitary Survey
November 20, 2012



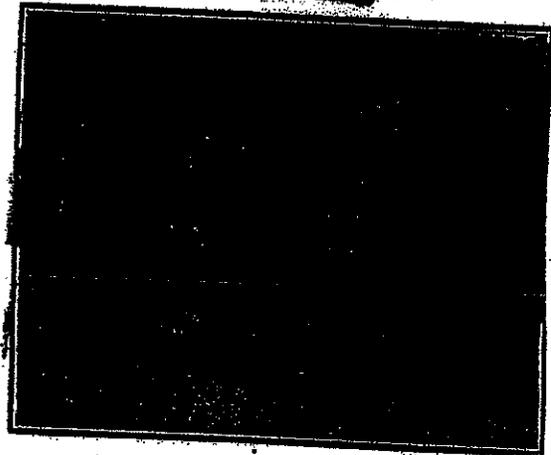
Bulk Tanks



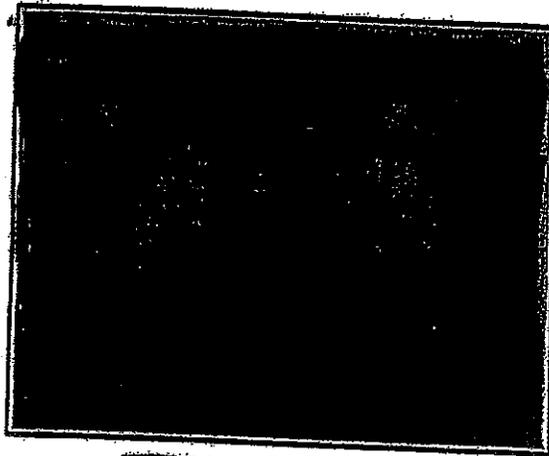
Bulk Tanks



Backwash Pump



High Service Pumps



Booster Pumps

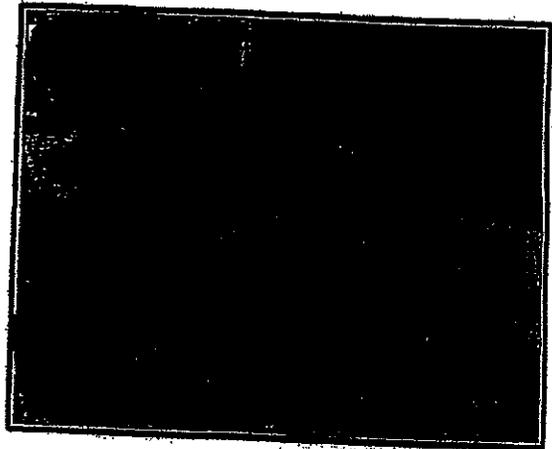


Booster Building Roof Flashing

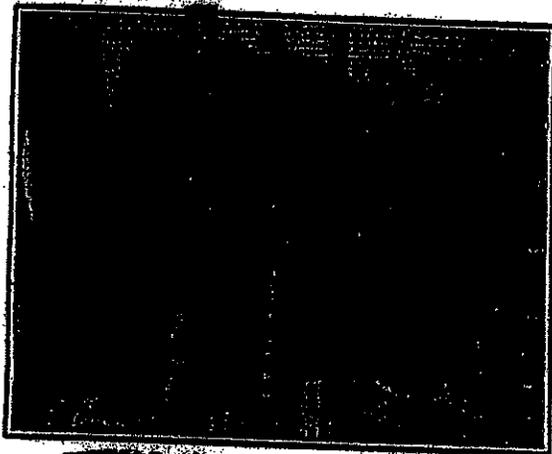
ATTACHEMNT 14
Photos
WVAWC – Kanawha Valley Sanitary Survey
November 20, 2012



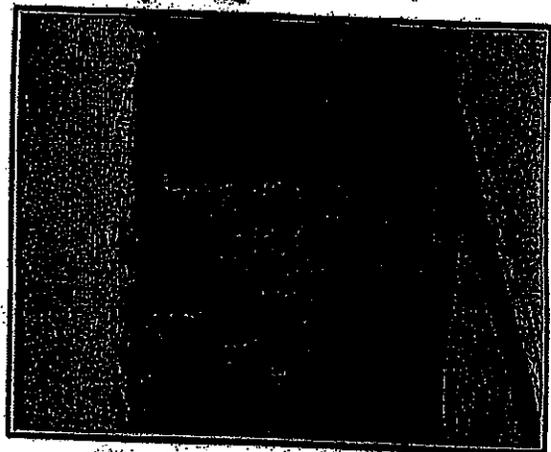
[REDACTED] Booster Pumps



[REDACTED] Booster Pumps



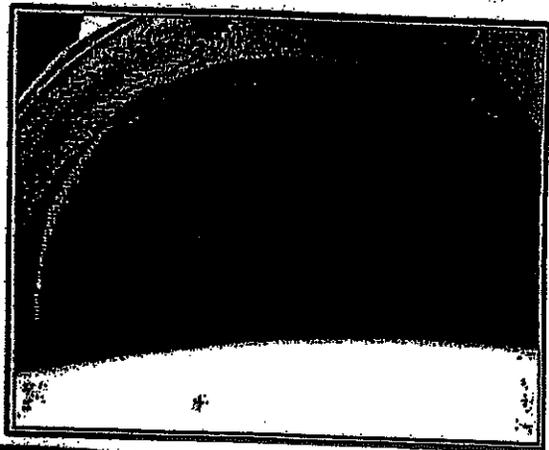
[REDACTED] Booster Pumps



[REDACTED] Booster Pump Packing



[REDACTED] Tank (1 of 2 Tanks)



[REDACTED] Tank Overflow Screen (missing)

ATTACHEMNT 15
Photos
WVAWC - Kanawha Valley Sanitary Survey
November 20, 2012



[REDACTED] Tank



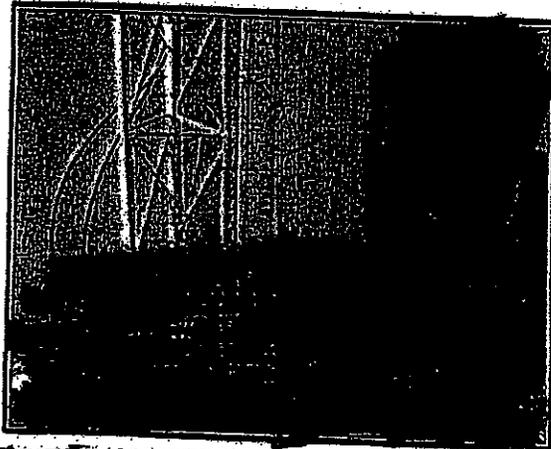
[REDACTED] Tank Grout Seal



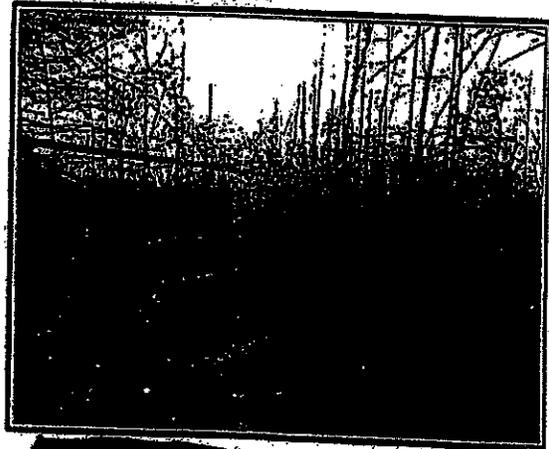
[REDACTED] Tank Overflow



[REDACTED] Tank Overflow (2)

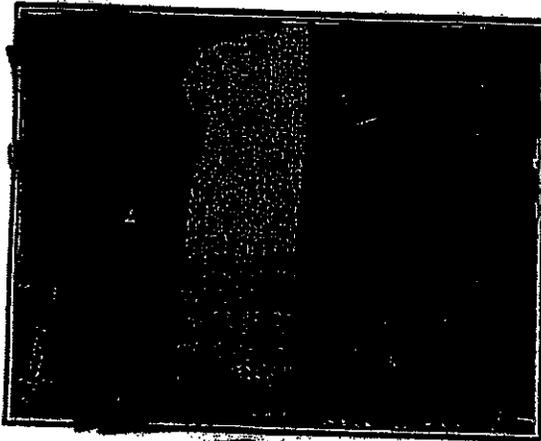


[REDACTED] Tank Broken Level Gauge

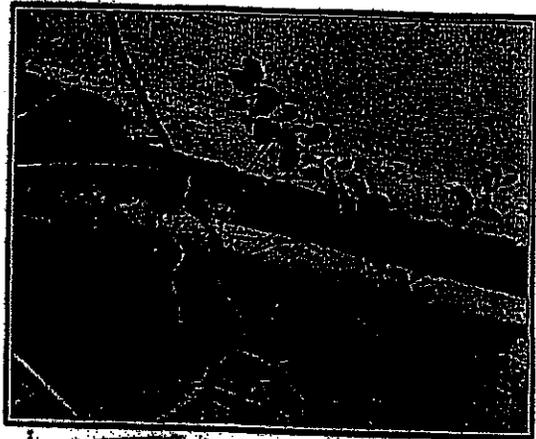


[REDACTED] Vegetation on Fence

ATTACHEMNT 16
Photos
WVAWC – Kanawha Valley Sanitary Survey
November 20, 2012



[Redacted] Tank



[Redacted] Tank Grout Seal

ATTACHEMNT 17
Photos
WVAWC - Kanawha Valley Sanitary Survey
November 20, 2012



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES
BUREAU FOR PUBLIC HEALTH
OFFICE OF ENVIRONMENTAL HEALTH SERVICES

Joe Manchin III
Governor

March 31, 2006

Martha Yeager Walker
Secretary

WVAWC-KANAWHA VALLEY DIST
HOLBROOK, THOMAS W
P O BOX 1906
CHARLESTON, WV 25327

RE: Source Water Questionnaire Reply Requested by April 14, 2006
WVAWC-KANAWHA VALLEY DIST, PWSID WV3302016, KANAWHA County

Dear Administrative Contact:

The Source Water Assessment and Protection (SWAP) program was created in the 1996 amendments to the 1974 *Safe Drinking Water Act (SDWA)*. This survey is intended to obtain feedback on current source water protection activities that surface water systems are currently pursuing or planning to pursue. Please complete and return the survey in the time period listed above.

Thank you for your input and assistance. Your participation in the source water protection program is imperative to protecting drinking water supplies across our state. Please contact me at 304-558-6713 or e-mail scottrodeheaver@wvdbh.org if you have questions or require additional information.

Sincerely,

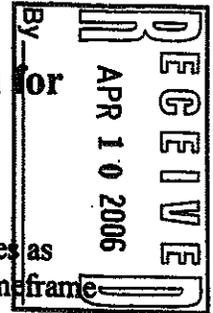
J. Scott Rodeheaver, Assistant Manager
Source Water Assessment and Protection
Environmental Engineering Division

JSR/cjj

Enclosures

Capitol and Washington Streets
1 Davis Square, Suite 200
Charleston, West Virginia 25301-1798
Telephone: 304-558-2981

WV Department of Health and Human Resources, Bureau for
Public Health
Annual Source Water Assessment and Protection Survey



Please answer the following questions as completely as possible and use additional pages as needed. Be sure to submit the completed survey and any additional pages within the time frame requested to the address provided below.

1. Basic information:

PWSID # 330201C
Public Water Supply Name WV AMERICAN WATER / KANAWHA VALLEY
Address Box 1906 CHARLESTON, WV 25327
Phone Number 304-340-2999
County KANAWHA
Administrative Contact Person Name BRETT MORGAN
Address Box 1906 CHARLESTON, WV 25327
Phone Number 304-340-2035
Email BMORGAN@WVAWATER.COM
Do you prefer to be contacted by email or mail? MAIL
Chief Operator Name RON BOGESS
Certification Number 2007000705F
Address Box 1906 CHARLESTON, WV 25327
Phone Number 304-340-2036
Email RBOGESS@WVAWATER.COM
Surface Water Intake Names(s)
ELK RIVER AP 1.0

2. What do you perceive as barriers to developing and implementing source water or watershed protection plans? Check all that apply.

- Lack of available funding
- Lack of community involvement
- Lack of information on source water protection
- Lack of technical assistance
- Lack of personnel resources

3. Would your system be interested in low interest loans from the Drinking Water State Revolving Fund for purchasing land and conservation easements within the watershed area for the purpose of source water protection? Yes No List type of activities if know:

4. Would your system be interested in low interest loans from the Drinking Water State Revolving Fund for implementing voluntary source water protection measures such as land use controls and management tools including: fencing, riparian buffers or public outreach activities? Yes No

List type of activities if know:

Source Water Protection Program Surface Water Survey 2006

5. Are you currently participating in an early warning communication network?

Yes No If yes, name of network if available _____

Would you be interested in working with the other public surface water suppliers to participate in an early warning communication network? Yes No

6. Upon review of land use or other activities within your source water watershed, based on your knowledge, what are the top four (4) potential threats to your water supply? (One (1) being the highest)

| Land Use Activities | Ranking | Land Use Activities | Ranking |
|---|---------|--|---------|
| Industrial Discharges | | Sediment Runoff - Agriculture | |
| Mining Discharges | | Sediment Runoff - Timbering | 1 |
| Animal Waste from Feedlots and Farms | | Sediment Runoff - Transportation Routes | |
| Concentrating Animal Feeding Area | | Sediment Runoff - New Building | 2 |
| Combined Sewer and Sanitary Sewer Overflow (CSOs/SSOs) Discharges | 3 | Non-Functioning Septic (on-site sewage disposal) Systems or Straight Pipe Discharges | |
| Pesticides and Fertilizers from Agricultural Fields | | Pasture (grazing) | |
| Municipal Sewage Discharges | | Transportation Routes | |
| Spills and Leaks of Petroleum Products and Industrial Chemicals | | Polluted Runoff from Storm Water or Snowmelt in Urban and Suburban Areas | 4 |
| Recreational Boating Areas | | Flooding | |
| Others | | | |
| | | | |
| | | | |

7. Please identify any local source water protection activities on the list below that you are planning to do with a (P), currently doing with a (C), or have interest in doing with an (I) in your area.

- Risk Management Plans
- Emergency Response Plans
- Contingency Plans
- Participate in an early warning communication network
- Stream monitoring beyond the normal regulatory requirements
- Land use measures (i.e. prohibition of various land uses in area, special permitting of land uses, transfer of development rights, growth controls, etc.)
- Land or easement acquisitions
- Public education and outreach activities (i.e. signage and stencils for visual awareness of protection areas, and newspaper, radio or TV ads about drinking water)
- Participate in a local source water or watershed committee
- Review your watershed for potential contaminant sources
- Surface water flow modeling.

Payne, Judy L

From: Fucillo, Rocco S
Sent: Friday, April 12, 2013 11:43 AM
To: Huffman, Randy C
Cc: Curtis, Chris H; Dadisman, Marsha A; Jordan, Molly M; Harich, Christopher H; Bailey, Beatrice P; Kemp, Ruth F; Ledford, Joyce A; Jackson, Carol L; Kerley, Neal R; Fucillo, Rocco S; Payne, Judy L
Subject: U.S. Chemical Safety Board Recommendations
Attachments: Chemical Study Resolution due to accident at the Bayer CropScience.doc
Importance: High

Secretary Huffman,

As you are aware, in August 2008, there was an accident at the Bayer CropScience facility in Institute which resulted in the fatality of two workers. Subsequent to that accident, the U.S. Chemical Safety and Hazard Investigation Board conducted an investigation and made numerous recommendations; including recommendation for the West Virginia Department of Environmental Protection and the Department of Health and Human Resources to "Work with the Director of the Kanawha-Charleston Health Department to ensure the successful planning, fee collection, and implementation of the Hazardous Chemical Release Prevention Program...including the provision of services to all eligible facilities in the State."

Shortly after receipt of that recommendation, there was considerable discussion within the West Virginia Department of Health and Human Resources (DHHR) and including your staff, specifically Mike Dorsey, about the logistics and feasibility of establishing such a program. Since DHHR has neither the capacity, resources, nor expertise to undertake such a program, and because several other state, federal and local agencies are also recommended to take action (and in fact have some responsibility in this arena), we believe the appropriate course of action would be a legislative study on the need for a program of this nature.

To that end, my staff have drafted the attached study resolution. I believe Mr. Dorsey has had the opportunity to provide input into its development, but wanted to be sure you are in agreement before discussions commence with the Governor's office and the legislature. Our plan is to introduce the study resolution next legislative session.

I would be happy to discuss this further or provide additional information at your request.

Rocco S. Fucillo, Cabinet Secretary
Department of Health and Human Resources
One Davis Square, Suite 100 East
Charleston, West Virginia 25301
Telephone: (304) 558-0684

1 HOUSE CONCURRENT RESOLUTION NO. ____

2 (By _____)

3
4
5
6 Requesting the Joint Committee on Government and Finance study
7 the need for a specialized hazardous chemical release
8 prevention program for the regulation, safety planning and
9 oversight of chemical facilities located in the State of
10 West Virginia.

11 WHEREAS, On August 28, 2008, an explosion occurred at the
12 Bayer CropScience facility located in Institute, West Virginia,
13 that resulted in the loss of lives, injuries to employees,
14 contract workers, volunteer fire firefighters and property, and
15 required local residents to shelter-in-place for more than three
16 hours; and

17 WHEREAS, As a result of the Bayer CropScience accident the
18 United States Chemical Safety and Hazard Investigation Board
19 conducted an investigation into the matter and compiled an
20 investigative report in January 2011; and

21 WHEREAS, The investigative report included a recommendation
22 that the Director of the Kanawha-Charleston Health Department
23 establish a hazardous chemical release prevention program that

1 would require direct participation by the chemical industry,
2 enhance the prevention of accidental releases of highly
3 hazardous chemicals, optimize responses in case of emergencies,
4 and require facility safety, planning and assistance by an
5 independent entity on a state or local level; and

6 WHEREAS, The investigative report further recommended that
7 the new program study and evaluate the possible applicability of
8 the experience of similar programs throughout the country that
9 focus on the prevention of chemical accidents and that require
10 regular monitoring, strict oversight and enforcement of federal
11 and state safety requirements for chemical facilities; and

12 WHEREAS, The chemical industry in West Virginia is
13 currently regulated, inspected and monitored by the federal
14 Occupational Safety and Health Administration and the United
15 States Environmental Protection Agency, as well as the West
16 Virginia Department of Environmental Protection; and

17 WHEREAS, The safety and welfare of the citizens of West
18 Virginia, particularly those living in areas that include
19 chemical facilities, must be balanced with economic and
20 regulatory considerations to ensure that the regulation and
21 oversight of the chemical industry in West Virginia will not be
22 duplicative, costly or overly burdensome to State and local

1 governments or the chemical facilities operating in this State;
2 and

3 WHEREAS, In order to ensure that the development of a new
4 program is needed, practical, affordable and realistic in West
5 Virginia, a broad group of stakeholders must participate in a
6 study of the relevant issues and related costs; study and review
7 programs in other states; determine whether the other state
8 programs would address the needs, health and safety concerns and
9 other factors relevant to West Virginia; determine whether the
10 programs in other states are duplicative of the existing
11 oversight and regulatory powers of current state or federal
12 agencies; review the possibility of developing similar programs
13 in West Virginia, if needed; and as an alternative, study the
14 feasibility of strengthening and funding the regulatory and
15 oversight powers of existing programs; and therefore, be it

16 *Resolved by the Legislature of West Virginia:*

17 That the Joint Committee on Government and Finance be
18 requested to study existing chemical hazard prevention and
19 regulatory programs throughout the country; study and evaluate
20 the need for an additional independent oversight program in West
21 Virginia that will regulate the chemical facilities located in
22 this state, enhance the prevention of accidental releases of
23 highly hazardous chemicals and optimize responses to such

1 emergency occurrences; to determine whether any such program
2 would be duplicative of existing federal or state programs; to
3 study and determine the practicality, cost and feasibility of
4 establishing a chemical hazard prevention and regulatory program
5 on a state or local basis; and to study whether there are
6 alternative means of increasing the safety and confidence of the
7 communities, workforce and state and local authorities affected
8 by the existence of the chemical facilities in this State; and,
9 be it

10 *Further Resolved*, that the Joint Committee on Government
11 and Finance report to the regular session of the Legislature,
12 2014, its findings, conclusions and recommendations, together
13 with drafts of any legislation necessary to effectuate its
14 recommendations, and, be it

15 *Further Resolved*, That the expenses necessary to conduct
16 the study, to prepare a report and to draft necessary
17 legislation be paid from legislative appropriations to the Joint
18 Committee on Government and Finance.

1 S:\secretary\Secretary Fucillo\104 - legislation\Chemical Study Resolution due to accident at the Bayer CropScience.doc

CERTIFICATE OF SERVICE

I, Christopher S. Dodrill, Assistant Attorney General and counsel for the Respondents Karen L. Bowling, Secretary of the West Virginia Department of Health and Human Resources, and Letitia Tierney, Commissioner of the Bureau for Public Health, hereby verify that I have served a true copy of the "Appendix of DHHR Respondents" upon the counsel listed below by depositing said copy in the United States mail, with first-class postage prepaid, on this 12th day of March, 2014, addressed as follows:

Jennifer S. Wagner, Esq.
Bren J. Pomponio, Esq.
Mountain State Justice, Inc.
1031 Quarrier Street, Suite 200
Charleston, WV 25301
Counsel for Petitioners

J. Michael Becher, Esq.
Joseph M. Lovett, Esq.
Appalachian Mountain Advocates
P. O. Box 507
Lewisburg, WV 24901
Counsel for Petitioners

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