TENTATIVE AGENDA AND MINIBOOK
STATE WATER CONTROL BOARD MEETING
MONDAY, JUNE 27, 2016

HOUSE ROOM D, GENERAL ASSEMBLY BUILDING
9TH & BROAD STREETS
RICHMOND, VIRGINIA 23219

CONVENE – 9:30 A.M.

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ADJOURN

NOTE: The Board reserves the right to revise this agenda without notice unless prohibited by law. Revisions to the agenda include, but are not limited to, scheduling changes, additions or deletions. Questions arising as to the latest status of the agenda should be directed to the staff contact listed below.

PUBLIC COMMENTS AT STATE WATER CONTROL BOARD MEETINGS: The Board encourages public participation in the performance of its duties and responsibilities. To this end, the Board has adopted public participation procedures for regulatory actions and for case decisions. These procedures establish the times for the public to provide appropriate comment to the Board for its consideration.

For Regulatory Actions (adoption, amendment or repeal of regulations), public participation is governed by the Administrative Process Act and the Board's Public Participation Guidelines. Public comment is accepted during the Notice of Intended Regulatory Action phase (minimum 30-day comment period) and during the Notice of Public Comment Period on Proposed Regulatory Action (minimum 60-day comment period). Notice of these comment periods is announced in the Virginia Register, by posting to the Department of Environmental Quality and Virginia Regulatory Town Hall web sites and by mail to those on the Regulatory Development Mailing List. The comments received during the announced public comment periods are summarized for the Board and considered by the Board when making a decision on the regulatory action.

For Case Decisions (issuance and amendment of permits), the Board adopts public participation procedures in the individual regulations which establish the permit programs. As a general rule, public comment is accepted on a draft permit for a period of 30 days. If a public hearing is held, there is an additional comment period, usually 45 days, during which the public hearing is held.

In light of these established procedures, the Board accepts public comment on regulatory actions and case decisions, as well as general comments, at Board meetings in accordance with the following:

Regulatory Actions: Comments on regulatory actions are allowed only when the staff initially presents a regulatory action to the Board for final adoption. At that time, those persons who commented during the public comment period on the proposal are allowed up to 3 minutes to respond to the summary of the comments presented to the Board. Adoption of an emergency regulation is a final adoption for the purposes of this policy. Persons are allowed up to 3 minutes to address the Board on the emergency regulation under consideration.

Case Decisions: Comments on pending case decisions at Board meetings are accepted only when the staff initially presents the pending case decision to the Board for final action. At that time the Board will allow up to 5 minutes for the applicant/owner to make his complete presentation on the pending decision, unless the applicant/owner objects to specific conditions of the decision. In that case, the applicant/owner will be allowed up to 15 minutes to make his complete presentation. The Board will then allow others who commented during the public comment period (i.e., those who commented at the public hearing or during the public comment period) up to 3 minutes to respond to the summary of the prior public comment period presented to the Board. No public comment is allowed on case decisions when a FORMAL HEARING is being held.

Pooling Minutes: Those persons who commented during the public hearing or public comment period and attend the Board meeting may pool their minutes to allow for a single presentation to the Board that does not exceed the time limitation of 3 minutes times the number of persons pooling minutes, or 15 minutes, whichever is less.

New information will not be accepted at the meeting. The Board expects comments and information on a regulatory action or pending case decision to be submitted during the established public comment periods. However, the Board recognizes that in rare instances, new information may become available after the close of the public comment period. To provide for consideration of and ensure the appropriate review of this new information, persons who commented during the prior public comment period shall submit the new information to the Department of Environmental Quality (Department) staff contact listed below at least 10 days prior to the Board meeting. The Board's decision will be based on the Department-developed official file and discussions at the Board meeting. In the case of a regulatory action, should the Board or Department decide that the new information was not reasonably available during the prior public comment period, is significant to the Board's decision and should be included in the official file, the Department may announce an additional public comment period in order for all interested persons to have an opportunity to participate.

PUBLIC FORUM: The Board schedules a public forum at each regular meeting to provide an opportunity for citizens to address the Board on matters other than those on the agenda, pending regulatory actions or pending case decisions. Those wishing to address the Board during this time should indicate their desire on the sign-in cards/sheet and limit their presentations to 3 minutes or less.

The Board reserves the right to alter the time limitations set forth in this policy without notice and to ensure comments presented at the meeting conform to this policy.

Department of Environmental Quality Staff Contact: Cindy M. Berndt, Director, Regulatory Affairs, Department of Environmental Quality, 629 East Main Street, P.O. Box 1105, Richmond, Virginia 23218, phone (804) 698-4378; e-mail: cindy.berndt@deq.virginia.gov.

VPA Permit No. VPA00076 – Synagro Central, LLC. – Madison County: Synagro Central, LLC. submitted a Virginia Pollution Abatement (VPA) permit application for the land application of biosolids. The draft permit, if issued as drafted, would authorize Synagro to land apply biosolids to 8 sites, totaling 2,024.5 acres in Madison County. Of the 8 sites proposed, 2 are currently permitted under an administratively continued Virginia Department of Health (VDH) Biosolids Use Regulation (BUR) permit and are currently eligible for land application by Synagro. The 2 VDH-BUR sites comprise 374.5 acres. Notice for this proposed permit issuance was published in *The Madison Eagle* on January 28, 2016 and February 4, 2016. The 30-day public notice comment period ended on February 29, 2016. NRO received 132 comments, 128 of which requested a public hearing. A public hearing was authorized on March 30, 2016.

The public hearing was held at 7:00 p.m. on June 8, 2016, at the Madison County High School in Madison, Virginia. Mr. Joe Nash served as hearing officer. An interactive informational session preceded the hearing. The public hearing comment period closed on June 17, 2016. Below is a summary of the comments that have been received thus far:

- 12 individuals provided oral comments during the public hearing and 5 of those individuals provided written comments following the hearing.
    - 2 individuals who provided comments spoke in favor of permit issuance
- 7 written comments were received prior to the hearing
- 7 written comments were received after the hearing (as of June 9, 2016).

Staff combined and summarized comments, where possible, without losing specifics. The summary of comments along with staff's response is below. The responses were prepared with regulatory, technical, and historical perspectives. As the public comment period for the public hearing will not close until June 17, 2016, the summary includes only those responses received as of June 9, 2016. Staff will provide the board a final response to comments prior to the board meeting.

As of June 9, 2016, staff is considering a recommendation from VDH and awaiting any additional comment that may be received prior to the close of the public comment period on June 17, 2016. Dependent upon final review of this information, staff will either recommend the draft permit be issued as written or issued with modifications that staff will recommend. Staff will provide the board with the recommendation it intends prior to the board meeting.

Summary of Public Comments and Staff Responses

1. Protection of Surface Waters

Comments were received related to concerns regarding adverse impacts to surface water quality:

- Potential for contamination from runoff into surface waters and the Chesapeake Bay;
- Adverse effects on fish and other aquatic life as a result of run-off;
- Proximity of the MA15 site to the Town of Orange Water Treatment Plant (WTP) intake;
- Negative impacts to recreational use of the Rapidan River due to runoff; and
- Non-point source discharges more concerning than point source discharges.

Staff Response:

The conditions in the draft permit were written in accordance with Virginia Pollution Abatement (VPA) regulation (9VAC25-32-30.A.) to prohibit point source discharges of pollutants to surface waters, including wetlands, except in the case of a storm event greater than the 25-year, 24-hour storm.

The regulation (9VAC25-32-560) requires the implementation of agricultural best management practices (BMPs) to reduce nonpoint source pollution from farmland. This includes restrictions on application timing, application rate, slope, and in particular, setback distances from sensitive environmental features. DEQ regulates stormwater from certain non-point agricultural sources (such as biosolids) by requiring these BMPs that reduce pollutant levels in the stormwater, rather than the point-source approach that sets specific pollutant limits. So just like stormwater from any other source, there may be pollutants present, but the permit conditions ensure that pollutant levels are minimized and downstream surface waters are protected.

The regulatory requirements specifically consider protection of public water supplies, and require a minimum setback of 100 feet between biosolids land application areas and surface waters designated as public water supplies. In the case of the MA15 site, at least 72 feet of the required 100 feet setback is a mixture of permanent vegetative cover and wooded riparian buffer. The Virginia Department of Health (VDH) has recommended that

the setback distance for fields adjacent to the Rapidan River and closest to the Town of Orange water treatment plant intake be increased to 200 feet, and that notification be provided to Town of Orange officials and Town of Madison officials when biosolids land application is to take place on fields adjacent to the Rapidan River immediately upstream of the respective water treatment plants. DEQ is considering this recommendation and conducting further review of the site in conjunction with Synagro. This staff response will be updated once that consideration is complete.

Where impaired waters exist, the implementation of agricultural BMPs is the best method to reduce nonpoint source pollution from farmland in the subject watersheds. In most cases, these BMPs are implemented on a voluntary basis; however, agricultural land that receives biosolids is subject to regulatory requirements mandating key BMPs such as those previously mentioned. Thus, a farmer's choice to fertilize with biosolids increases the number of BMPs implemented as well as the regulatory scrutiny of the agricultural practices implemented on his or her farm.

2. Protection of Groundwater

Comments were received related to groundwater:

- Excess nutrients and contaminants migrating into ground water and drinking water wells.

Staff Response:

The conditions in the draft permit are based on requirements in the VPA regulations which were developed to ensure that neither infiltration nor runoff have an effect on groundwater. Planting and harvesting requirements are designed such that the plant root systems uptake nutrients. Runoff and infiltration are addressed through the assessment of field conditions, such as crop type, distance to groundwater, soil type, and topography. Additionally, the permit conditions include limitations on land application to sites with >15% slope and prohibit staging biosolids on sites characterized by the US Department of Agriculture Soil Survey as "Frequently Flooded." The VPA regulation also requires that a Nutrient Management Plan (NMP) be written by a Virginia Department of Conservation and Recreation (DCR) certified NMP writer, and that land application be conducted in accordance with the NMP. The NMP dictates rate and timing of application. NMPs are written to ensure that biosolids are land applied at a rate which is agronomically appropriate, and to prevent application of excess nutrients.

The VPA regulation requires a 100' setback distance from all wells located near land application sites. VDH regulation, (12VAC5-630-380) requires a minimum 100' distance between new well construction and a "Sewage Disposal System or other contaminant source" including drain-fields, underground storage tanks, barnyards and hog lots. The VPA permit requirement for a 100' setback from biosolids land application is a conservative application of this established standard, as agricultural fertilization of crops is not included in the VDH regulations as a contaminant source in this context and is not an activity that would require a mandatory setback for newly constructed wells. For wells that do not meet the VDH safe construction standards, the impact risk to a well is greater from more frequent and common activities surrounding the well than from land application activities undertaken observing appropriate regulatory setbacks, BMPs and other required protections.

Assistance for private well owners is available from the Virginia Household Water Quality Program administered by Virginia Cooperative Extension (http://www.wellwater.bse.vt.edu/vahwqp.php).

3. Biosolids Composition and Protection of Human Health and the Environment

Comments were received expressing concerns over the composition of biosolids as it relates to human health and the environment:

- Potential risks from unknown pathogens, metals and other contaminants;
- Air quality;
- Long term effects;
- Effectiveness of the treatment process;
- Monitoring frequency of biosolids;
- Every load of biosolids delivered to a site should be tested;
- Contamination of biosolids could occur during transport to the land application site;
- Self-monitoring is a conflict of interest;
- Application should only be allowed of Class A material as it is more treated;

- Class B biosolids require more stringent oversight;
- The permit only regulates 9 heavy metals which falls short of all possible metals that could present;
- CPLR biosolids should not be allowed due to possible accumulation of metals;
- Large food companies not accepting products from land that has used biosolids;
- Some European countries have banned the use of biosolids;
- University of Georgia study suggesting biosolids can impact health;
- Excess nutrient and contaminants entering the food chain;
- While it is considered safe today, further studies may reveal detrimental effects of biosolids;
- Risks are unknown;
- Lack of studies on some of the potential effects of substances and elements found to be in biosolids; and
- Concern that biosolids could contain harmful substances or elements that the scientific community has not determined to be harmful.

Staff Response:

The Virginia State Water Control Law requires permits for the application of biosolids. The permit conditions contain all of the criteria required by the federal regulation plus additional requirements such as setbacks from homes and environmentally sensitive features, NMPs, public notification (including signage), financial assurances, local authority, inspections, and training. The combined state and federal restrictions, such as the federal access and harvesting restrictions and the state requirement for signage, work in concert to mitigate risk. Any person who land applies biosolids must obtain authorization to do so under a VPA permit and conduct all land application activity in conformance with that permit.

The constituents in biosolids that the draft permit requires be monitored, and the frequency of that monitoring, is consistent with federal regulation. Frequency is based on the amount of biosolids that is land applied from a particular source, and takes into account the expected consistency of the biosolids content. Sources of contamination from industrial sources is regulated through the implementation of pre-treatment programs that both protect the critical biological populations in advanced wastewater treatments plants as well as limit potentially harmful levels of pollutants in the solids removed from the wastewater. Contamination of biosolids during transport from the wastewater treatment plant to the land application site has not been identified as a likely source of pollutant limit exceedances. Monitoring by the permit holder is a primary component of the regulations used to implement Clean Water Act requirements and is used extensively throughout all water permits.

The 2007 Virginia General Assembly commissioned a group of experts to study the issues surrounding biosolids. The Biosolids Expert Panel (the Panel) published their final report in 2008. The Panel determined that as long as biosolids are applied in conformance with all state and federal laws and regulations, that there is no scientific evidence of any toxic effect to soil organisms, plants grown in treated soils, or to humans (via acute effects or bio-accumulation pathways) from inorganic trace elements (including heavy metals) found at the current concentrations in biosolids. DEQ and the State Water Control Board (SWCB) considered the Panel's review and recommendations when the VPA regulations were amended in 2013. The Panel noted in its report that "while certain contaminants have been found in land-applied biosolids, mere presence will not in itself cause water quality impacts without a means to reach ground and surface waters. Additionally, presence does not indicate danger without a toxic concentration."

Research into the safety and use of biosolids as an agricultural soil amendment is ongoing. The Clean Water Act requires the Environmental Protection Agency (EPA) to review existing sewage sludge regulations at least every two years. The purpose of the review is to identify additional pollutants that may be present in sewage sludge, and if appropriate to develop regulations for those pollutants. DEQ, along with VDH, monitor the progress of the research conducted by EPA in this regard, and if necessary, will respond to significant findings with recommendations to modify the VPA regulation. During the summer of 2014, VDH performed a follow-up review of the VPA regulations in light of research that had been conducted since 2008. Consistent with earlier reviews, VDH's recent literature review did not find any contributory associations between biosolids exposure and adverse health effects. Until there is new relevant research to conclude otherwise, DEQ is confident that the VPA regulations and permits are protective of human health and the environment.

4. Livestock, Wildlife, and Unrestrained Domestic Animals

Comments were received concerning possible effects of biosolids applications to livestock and how wildlife and unrestrained domestic animals moving through land application sites may be affected.

Staff Response:

The regulations require that livestock not graze on fields for a minimum of 30-days after biosolids have been land applied.

The wildlife and domestic animal matter was considered by the Biosolids Expert Panel and no additional requirements were included in the VPA Regulation, as it was found that the limited exposure to wildlife poses no greater threat than normal agricultural activity. Additionally, the federal risk assessment did not find that wildlife posed a significant risk of pathogen transmission.

5. Landowner Consent

Comments were received questioning whether the landowners of the sites included in the permit application were aware of what they were receiving.

Staff Response:

Virginia law (§ 62.1-44.19:3.A.3 of the Code of Virginia) requires that permit applications for land application of biosolids include the landowner's written consent to apply biosolids on his or her property. In signing the consent form, the landowner also attests that they have received a copy of the DEQ Biosolids Fact Sheet. The Fact Sheet includes information regarding the origin of biosolids, different types of biosolids treatment, what testing is required, and ongoing EPA research on contaminants of emerging concern.

6. Odor

Comments were received expressing concern in regard to the odor associated with biosolids.

Staff Response:

The regulations do not prohibit odors. Biosolids, at times, can and do have objectionable odors. The type of treatment process and the climatic conditions during and after application can influence both odor and its intensity. DEQ encourages nearby residents to contact the agency at the number provided on the notification sign as soon as possible when odor issues are identified so that site-specific issues can be investigated and any patterns with sources, practices, or sites identified. The regulation does require the mitigation of odors [9VAC25-32-60.F.1.c.(3)] by both the wastewater plants generating biosolids and the land appliers. Accordingly, the draft permit requires an Odor Control Plan with the following conditions:

(a) Methods used to minimize odor in producing biosolids;
(b) Methods used to identify malodorous biosolids before land application (at the generating facility);
(c) Methods used to identify and abate malodorous biosolids if delivered to the field, prior to land application; and
(d) Methods used to abate malodor from biosolids if land applied such as incorporation, if applicable.

The odor control plans will become an enforceable part of the permit, and may be reviewed over the course of the permit term for adequacy should site or source specific odor issues become repetitive.

7. Insufficient Laws, Regulations, and Permits

Comments were received addressing VPA laws, regulations, and draft permits and the lack of confidence that the permits encompass or thoroughly regulate all potential situations:

- Laws and regulations that are not protective of human health and the environment;
- Emerging contaminants not adequately researched or regulated; and
- Don't trust agency findings and verbal assurances.

Staff Response:

DEQ has processed the permit application and prepared a draft permit in accordance with the law and regulation as they exist. It is not DEQ's role in this permit process to assess the adequacy of the regulations. The proposed draft permit is an original issuance of a VPA permit. As part of the issuance process, and in accordance with the VPA regulation, adjacent landowners were notified, a public meeting was held, and public notice of the draft permit was completed.

The proposed draft permit contains all of the criteria required by the state and federal regulations such as setbacks from homes and environmentally sensitive features, NMPs, public notification (including signage), financial assurances, local authority, inspections, and training.

The work of the 2008 Virginia Biosolids Expert Panel, the biannual reviews by the EPA, the technical advisory committee that advised DEQ on the regulations promulgated in 2013, and the VDH review in 2014 have all contributed to the existing regulatory requirements. In addition, the 2016 Virginia General Assembly passed HJ120, which directs the Joint Legislative Audit and Review Commission (JLARC) to analyze scientific literature on the health effects of biosolids and industrial residuals, evaluate the feasibility of requiring municipal utilities that are currently permitted to generate "Class B" material to upgrade their facilities to generate "Class A" material, and undertake other analyses. This is a two-year study.

The draft permit includes a "reopener" clause, which would allow DEQ to make modifications to the permit before the expiration date, should any of JLARC's findings necessitate changes to State Water Control Law or the VPA Permit Regulation.

8. Property Values, Truck Traffic, and Quality of Life in Madison and Orange Counties

DEQ received comments that alleged that there would be a decrease in property values and a negative effect on the quality of life as a result of land application of biosolids:

- Financial implications due to biosolids applications on nearby properties;
- Financial and safety implications of large trucks on small roads;
- Decreased tourism due to the perception that Madison and Orange Counties are not stewards of their natural resources;
- Effect on quality of life as a result of decreased ability for recreational use of the Rapidan River and the outdoors;
- Decreased property value as a result of odors and contaminated streams; and
- Decreased outdoor recreational opportunities as a result of odors and contaminated streams.

Staff Response:

The impact of land application on property values was an inherent consideration during the development and adoption of the VPA regulation, and the regulation includes requirements specifically designed to protect the quality of surface waters and reduce the potential for odor impacts. The draft permit was prepared in accordance with the regulation.

In 2007, HJR 694 required the Biosolids Expert Panel to respond to the question of whether odors from biosolids could affect property values or impact human health and well-being. The Panel's final report recognized that odors from biosolids could potentially impact property values, but could not confirm such an impact or the extent of such an impact based on the current body of scientific literature and information presented directly to the Panel. The Panel recommended that DEQ consider requiring that municipal biosolids generators be required to have odor control plans to ensure that the generator is looking at critical control points to minimize odors, thus reducing the potential that odor would impact adjacent properties. The draft permit includes a requirement for odor control plans from both the generators of the biosolids land applied as well as the land applier.

The draft permit requires that transport routes shall comply with all VDOT requirements and standards as specified in section 9VAC25-32-540 of the VPA Permit Regulation. The draft permit also specifies the operational requirements of vehicles that may be used to transport biosolids, as described in sections 9VAC25-32-420.A. and 9VAC25-32-540. of the VPA Permit Regulation.

9. Background Water and Soils Monitoring

Comments were received related to water and soil monitoring:

- Requesting background testing on both surface and ground water near application site to establish baseline levels;
- Requesting background testing on soils at application sites;
- Requesting surface water, groundwater, and soils monitoring post-application, to include monitoring of wells adjacent to land application sites; and
- Biosolids applications contradict USDA-NRCS Soil Health initiative.

Staff Response:

Biosolids land application research that included extensive pre and post application monitoring of soils, stormwater runoff, and groundwater was used to design the best management practices prescribed in the permit

so that ongoing testing would not be necessary. The extent of pre-application soils monitoring in the draft permit is based on the need of data to support the planning of appropriate land application rates. For metals, protective application rates are not dependent upon the concentration of metals in the soils, considering that the land application sites currently support agricultural use (i.e. if there were a soils problem that would cause environmental issues related to metals, that problem would likely be occluding agricultural productivity). For nutrients, the degree of pre-application monitoring in soils is based on the nutrient management regulations and standards and criteria. When permit conditions are followed, post-application monitoring of soils, surface water, and groundwater is not necessary. If non-compliance was suspected, DEQ would consider post application upgradient and downgradient monitoring as a mechanism to determine if any adverse environmental impact occurred.

DEQ is aware of the USDA-NRCS Soil Health initiative. Biosolids land application is consistent with USDA-NRCS soil health goals in that it adds organic matter which can increase biological activity, improve soil structure, and increase water holding capacity which will increase infiltration and reduce surface water runoff. As discussed in the staff response to protection of human health and the environment, the Biosolids Expert Panel concluded that as long as biosolids are applied in conformance with all state and federal laws and regulations, that there is no scientific evidence of any toxic effect to soil organisms.

10. Permit Applicant's Compliance History

Comments were received questioning the compliance history of the permit applicant, Synagro, and responsibility for any damages.

Staff Response:

Synagro currently land applies biosolids in Madison County under an administratively continued VDH-BUR permit and has no compliance issues currently.

The proposed draft permit would allow Synagro to land apply biosolids in a manner that is protective of human health and the environment. Pursuant to Va. Code (§ 62.1-44.22), the fact that any owner holds or has held a permit issued by the Board shall not constitute a defense in any civil action involving private rights of adjacent or nearby property owners. In addition, as required by the Va. Code (§ 62.1-44.19:3.H) and the VPA regulations, Synagro maintains an environmental liability policy applicable to all their land application activity in Virginia, to pay claims for cleanup costs, personal injury, and property damage resulting from the transportation, storage, or land application of biosolids.

If the permit is approved, DEQ will perform inspections to ensure compliance and will initiate enforcement action, if applicable. Any injunctive relief and civil charges sought in an enforcement proceeding will be consistent with applicable law as well as DEQ enforcement guidelines and appropriate for the severity of the violation.

11. Documents Not Made Available for Review

Comments were received about the lack of a Biosolids Management Plan (BSMP), Operations & Maintenance (O&M) Manual, spill contingency plan, Odor Control Plan (OCP), and Nutrient Management Plan (NMP), and that these documents should be available for public comment prior to permit issuance.

Staff Response:

The draft permit requirements have been developed in accordance with the public involvement procedures specified in State Water Control Law and the VPA Permit Regulation. The draft permit requires that the permit holder submit the BSMP to DEQ within 90 days of issuance. Included in the BSMP are the O&M Manual and OCP. These documents allow the individual permit holder to provide specifics as to how they will comply with certain permit requirements. In developing the regulatory requirements, DEQ recognized that for some aspects of environmental or human health protection, *how* the outcome is achieved is not as significant as meeting the minimum permit requirement. These specific management practices may evolve over the term of the permit due to site or operational changes, as well as compliance determinations.

NMPs are site specific plans that the permit holder must prepare prior to land application activities, and made available to DEQ at the land application site. NMPs are most efficacious when written just prior to biosolids applications so as to capture the most up-to-date data regarding crop type, soil nutrient levels, and other site conditions that may change over time. All plans must be written by a planner certified by the Virginia

Department of Conservation and Recreation (DCR), in accordance with the specifications outlined in DCR nutrient management regulations.

12. Application Rates

Comments were received questioning appropriate applications rate when not all biosolids constituents are known and lack of regulation for phosphorus applications.

Staff Response:

Only primary plant nutrients (nitrogen and phosphorus) are used for determination of the appropriate application rate, which is based on agronomics. The NMP requires that crop type, soil productivity level, soil nutrient levels, and biosolids nutrient content be used to determine the appropriate agronomic application rate. Nitrogen application rates are based on the current season's crop uptake, as nitrogen is more mobile and subject to loss more quickly. Phosphorus application rates are based on the potential for loss over a longer period of time due to the fact that phosphorus is less mobile; loss potential depends upon agronomic practices that reduce erosion and soil phosphorus saturation levels. The DCR nutrient management regulations limit biosolids phosphorus application rates based on soil phosphorus saturation levels. Biosolids application is precluded if soil phosphorus levels reach specified limits.

Concentration limits and total allowable loadings of other biosolids constituents are based upon what is considered to be protective of human health and the environment; these limits and rates are not based in agronomics. The EPA risk assessment that informed development of the federal limits and the bi-annual EPA reviews have not identified limits for constituents other than those identified in the draft permit. As stated in the Biosolids Expert Panel report, "while certain contaminants have been found in land-applied biosolids, mere presence will not in itself cause water quality impacts without a means to reach ground and surface waters. Additionally, presence does not indicate danger without a toxic concentration."

13. Support of Permit Issuance and Biosolids Use:

Comments were received that supported the issuance of the permit and biosolids use. These comments included:

- Long time use of biosolids with no environmental or health effects observed;
- Absence of health issues in young and old family members living near sites;
- Livestock and forage products produced on farms fertilized with biosolids meet quality tests required for export;
- Biosolids application supports healthy populations of microorganisms in soil; and
- Agricultural community needs the benefits provided by biosolids.

Staff Response:

DEQ acknowledges the comments provided.

VPDES Permit No. VA0001015, Appalachian Power Company – Clinch River Plant, Russell County: The information below is intended to provide a brief summary of: the operations at the facility; the proposed permit action and; the response to comments submitted during the public hearing and subsequent public comment period. It is not intended to be a complete analysis of the issues and decisions involved in the development of the proposed draft permit, but rather an "executive summary" of the major issues and the DEQ response. Full details of the permit are included in the Board book.

Background: The Clinch River Plant is an existing steam electric power generation facility located in Russell County, Virginia. The facility was built in the late 1950's and was originally fueled by coal. However, during 2015, the facility began conversion to natural gas, and the use of coal as a fuel permanently ceased on September 2, 2015. On March 13, 2015, DEQ received an application from Appalachian Power Company for the reissuance of its Virginia Pollutant Discharge Elimination System (VPDES) permit (VA0001015). The applicant addressed the continuing discharge of sanitary wastewater, industrial stormwater, and process industrial wastewater, but also included proposed changes in the operation which were anticipated as a result of the conversion to natural gas and from the dewatering activities associated with the closure of the remaining ash pond at the facility.

Facility Description: Historically, the Clinch River Plant has operated as a coal fired power generation facility which utilized three boilers to produce steam used to power the turbines to generate electricity. The principal features of the operation include the electric generation station and its associated raw water intake, cooling towers, solid waste landfill, coal handling areas, and ash ponds. Coal ash was produced from the operation at two sources. Electro-static precipitators removed fly ash from the air emissions and "bottom ash" was collected from the furnaces. The fly ash was pneumatically

transported to a storage silo, and ultimately trucked to an onsite APCO operated land fill. The "bottom ash" was removed from the furnaces and transported hydraulically to one of two ash ponds. The smaller of the two ash ponds, identified as Pond 2 was taken out of service in the 1990's, and was "closed in place" and capped. The Pond 2 closure project was completed in 2014. The larger pond, identified as Pond 1A/1B remained in service until the cessation of coal usage and subsequent conversion to natural gas. Five closed cycle cooling towers were used to disperse the heat from the operation. During the conversion to gas fired operation, one of the three boilers and its associated cooling tower have been permanently taken out of service, thereby reducing intake water demands and wastewater production. After the conversion to natural gas, the company projects that the maximum discharge flow rate from the facility will be reduced from 6.5 MGD to 4.84 MGD. Similarly, the company projects that the maximum rate of water withdrawal at the intake will be reduced from 14.1 MGD to 9.4 MGD as a consequence of the conversion.

Existing VPDES Permit: The APCO Clinch River Plant has been the subject of a VPDES permit since the beginning of the state program. The permit has addressed wastewater discharges from the operation and has included effluent limitations and monitoring requirements for a number of wastewater sources in the plant including: boiler blow-down; cooling tower blow-down; ash contact wastewater; sanitary wastewater; coal pile runoff; landfill leachate; and stormwater runoff. The permits have been written to protect and maintain the water quality of the streams, and are written to comply with all appropriate federal effluent limitation guidelines and state water quality standards. Since the promulgation of numeric water quality standards, copper has been the principal pollutant of concern at the facility, and the existing permit contains a water quality based effluent limitation of 39 ug/l (parts per billion). This limit was developed utilizing established department procedures and is considered to be protective of the site specific numeric water quality standards during periods of critical stream flows. Evaluations of the wastewater during previous permit reissuances have identified no other chemical constituents in the treated wastewater which are present in concentrations that have a reasonable potential to contravene the water quality standards.

ExistingWastewater Treatment: On or about 1993, in order to meet increasing demands of the VPDES permit, the company built an advanced wastewater treatment plant (AWWTP) onsite. This plant was placed in series with an existing conventional treatment system, and was designed to remove copper and other potentially toxic metal compounds from the wastewater in order to meet the water quality standards of the receiving waters. The plant is a dual train unit with a combined design capacity of 7.8 million gallons per day. The discharge from this treatment plant is identified as outfall 003. Since its construction, the plant has received all process water from the operation including ash transport wastewater, return water from the ash ponds and ash landfill leachate. The facility has an established record of compliance with the permit and the facility consistently produces a high quality effluent. During the last permit cycle the permit included a semiannual monitoring requirement for all potentially toxic metals for which the SWCB has issued numeric water quality standards. During this reissuance process, an evaluation of this data was conducted in accordance with standard agency practices, and the staff determined recent data indicates that none of the potential metals were present in concentrations that represent a "reasonable potential" to contravene the numeric water quality standards. Evaluation of the data indicated that effluent limitations for ammonia were necessary.

Receiving Stream: All wastewater from the operations is directed to the Clinch River, or to Dumps Creek a tributary to the Clinch River. The Clinch River is designated as waters which contain endangered or threatened species as identified by the United States Fish and Wildlife Service. One federally listed species of fish (yellowfin madtom) and fourteen species of federally listed endangered mussel species are known to occur in the Clinch River. The river is also designated as "critical habitat" for six of the listed mussel species. Published reports, current literature and comments received from the natural resource agencies cite that freshwater mussels are particularly sensitive to copper and ammonia; and high levels of selenium may result in larval deformities species of fish including yellowfin madtom or mussel host species.

Ash Pond Closure: The closure of Ash Pond 1A/1B is being proposed pursuant to a 2015 United States Environmental Protection Agency final Rule that regulates the disposal of coal combustion residuals. The long-term management of the impoundment including the closure, post-closure, and groundwater monitoring for both ponds will be addressed by the solid waste program in accordance with the Virginia Solid Waste Management Regulations and the EPA rule through issuance of a solid waste permit. The closure plan proposes to reclaim the site by re-grading the surface of the pond and installing an impermeable PVC liner, a soil layer and vegetative cover on the top of the ash. Before the ponds can be closed, the water contained in the ponds must be removed. Documents initially submitted by the company indicate that approximately 4.3 million gallons of water must be removed from the pond (However, results from a recent bathymetric survey estimate this volume to be approximately 2.7 million gallons). This water is proposed to be manually pumped from the pond and combined with other wastewaters at the site which are treated in the AWWTP in the same manner as the ash transport return water has been historically handled at the site. The company estimates that the dewatering operation to remove the estimated 4.3 MG would take approximately 24 days utilizing a schedule of 5 days per week and a flow volume of 180,000 gallons per day. After the initial dewatering, any stormwater falling on the open surface of the dewatered pond site that has contact with ash will also be directed to the treatment system.

Proposed VPDES Permit: The DEQ staff has developed a draft permit which addresses both the near term changes at the facility associated with the pond dewatering and pond closure, and the long term anticipated discharge which reflect the operational changes associated with the conversion to gas. Given the public interest in similar activities across the state, the SWRO staff adopted a regulatory scheme similar to that utilized at the Dominion Bremo and Possum Point facilities whereby the dewatering wastewater would be subject to a very restrictive set of effluent limitations, monitoring requirements and operational controls designed to ensure that any potential changes in effluent quality or quantity as a result of the dewatering does not have an adverse impact to the receiving stream. The special conditions applicable to the dewatering include the following:

1) **Dewatering Tier of Effluent limitations:** A special set of effluent limitations and monitoring requirements will apply to all discharges from the treatment plant during the period of dewatering, and for discharges of stormwater which contacts the surface of the ash during the closure period. Even though the discharge is an existing discharge of wastewater of which the ash contact water has always been a component, these limitations for this phase of operations were developed using techniques typically assigned to new discharges. This method uses a more restrictive "anti-degradation baseline" which limits the discharge to utilization of only 25% of the remaining assimilative capacity of the receiving stream during a "worst case" period of maximum potential discharge flow (i.e. 4.84 MGD) during drought flow conditions. The water quality based effluent limitations for this tier were assigned for these water quality based parameters regardless of whether or not the existing data from the facility demonstrated a reasonable potential to exceed the water quality criteria.

2) **Increased Monitoring Frequency:** Discharges during the period of dewatering and during periods which the AWWTP received stormwater from the pond site which contacts ash must be monitored 3 times per week.

3) **Reporting of Results:** During the dewatering period the company must obtain the results of their monitoring within four business days of taking the sample. Results of the weekly sampling shall be reported to DEQ no later than the close of business Friday of the week following sample collection.

4) **Flow Rate**: Pond dewatering contributions to the treatment plant shall be limited to a maximum flow rate of 0.36 MGD. The design capacity of the treatment plant is 7.8 MGD, and the anticipated maximum potential discharge from all wastewater sources including the ash contact water is approximately 4.84 MGD.

5) **Cease Dewatering Requirement**: The facility shall immediately cease the pumping of water from the ash pond upon receipt of results in exceedance of permit limitations and shall notify DEQ within 24 hours of being informed of the exceedance. The proposed monitoring requirements, effluent limitations and special conditions in the initial draft permit were proposed to be continued from the previous permit with only changes necessary to reflect the conversion to natural gas, address the closure of Ash Pond 1A/1B, and address new regulatory requirements such as EPA's recent (2014) promulgation of new 316(b) requirements for cooling water intake structures.

Public Notice: Notice of the proposed permit action and public hearing was published in the ***Bristol Herald Courier*** on April 1, 2016 and April 8, 2016. Notice of the proposed permit action and public hearing was also published in the ***Lebanon News*** on April 6, 2016 and April 13, 2016. DEQ sent the public notice to the local government officials on April 4, 2016. DEQ also sent the draft permit, draft fact sheet, and public notice to the US Fish and Wildlife Service (USFWS), Virginia Department of Game and Inland Fisheries (VDGIF), Virginia Department of Conservation and Recreation (VDCR), Virginia Department of Health (VDH) and U.S. Environmental Protection Agency (EPA) Region III on April 1, 2016.

Public Hearing: DEQ held the public hearing on May 4, 2016, at the Russell County Conference Center in Lebanon, Virginia. Ms. Lou Ann Jessee-Wallace served as the hearing officer. DEQ also provided two informational sessions prior to the hearing so that questions could be asked and answered prior to the hearing. 31 people attended the public hearing and 14 of those provided oral comments during the hearing.

Summary of Comments During the 45-day public comment period which ended on May 19, 2016, there were approximately 200 commenters; of those 200 comments received during the comment period 172 were in the form of email form letters citing nearly identical potential issues. Where possible, comments were grouped and summarized according to issue. (Summaries of all the comments received during the comment period and the details of DEQ responses to those comments begins on page 15). Below are summaries of the principle comments:

1) **Citizen Comments**: With the exception of the email form letters, most individual comments were non-technical in nature and requested that the DEQ provide restrictions in the permit to protect the sensitive nature of the Clinch River and to protect the downstream uses including protection for downstream water supplies. Several objected to the use of mixing zones in calculating effluent limitations because they perceived it as using river water to dilute the discharge to meet the standards. Many also suggested that the "end of pipe" limits be set at drinking water standards. The form letter comments also requested DEQ tighten the effluent limitations to reflect the AWWTP capabilities instead of adopting water quality based effluent limitations (WQBELs) utilizing mixing zone concepts. The form letters also requested that the agency require more frequent testing to assess compliance with the limits and that the permit require a monitoring plan

associated with the intake to ensure that rare and endangered species are not harmed.

2) **State and Federal Agency Comments**:

a. USFWS: The US Fish and Wildlife Service provided comments to both the initial application and the initial draft permit. Comments to the initial application were submitted in response to the new cooling water intake structure requirements of the EPA 316(b) regulations which went into effect in 2014. Comments on the draft permit address their concerns regarding the potential impact to the T&E species, and remaining comments with respect to 316(b) implementation. Comments submitted on the draft permit include:

i. More stringent monitoring and reporting requirements for chemical testing and whole effluent toxicity (i.e. WET) testing. The Service noted that the listed species are particularly sensitive to copper, selenium and ammonia and they recommended more frequent and stringent reporting of analytical data. They also recommended utilization of mussel species in the whole effluent toxicity testing, and made other specific recommendations with respect to specific permit limit and testing requirements.

ii. With respect to 316(b) requirements for the cooling water intake structure, the Service recommended that APCO conduct an Impingement Mortality and Characterization Study to support the development of a baseline for evaluating impingement monitoring and entrainment.

b. USEPA: DEQ received response from EPA indicating that their office supports the USFWS's recommendation to perform biologic monitoring prior to the final 316(b) best technology (BTA) available determination. EPA requests that the FWS develop and submit a study plan describing the design intent of the ESA study, level of effort, and duration of the requested biologic monitoring.

c. VDGIF: DGIF responded to the DEQ request for comments but did not provide objections to the permit, citing DEQ's "primary expertise and authority regarding water quality permitting issues".

d. DCR: The Virginia Department of Conservation and Recreation provided comments on the proposal which identified the significant number of natural heritage resources in the region and provided comments that DCR supported the activities to reduce potential impacts to aquatic resources in the Clinch including the controlled release and treatment of the discharge from coal-ash Pond 1A/1B. They also recommended that stockpiling of coal be discontinued at the site and they expressed their support of the USFWS recommendation for a monitoring plan to determine if rare, threatened and endangered aquatic species are being impinged and entrained by the intake structure. Their comments also recommend a more frequent sampling and reporting than once a year as outlined in the proposed permit.

e. VDH: Initial comments from VDH indicated that any downstream intakes were greater than 5 miles downstream, and the office of water programs had no additional comment. However, after receiving comments at the public hearing regarding potential impacts to downstream water users, the SWRO staff consulted with the VDH staff regarding the comments received. The VDH staff indicated that further review of the proposal did not raise any specific concerns given the proposed volumes and levels of treatment of the wastewater; however the VDH staff did suggest that the company be required to notify the closest downstream public water source (i.e. Town of St. Paul) of the initiation of dewatering so that the operators can have advance notice of any potential change in raw water characteristics.

3) NGO Comments:

a. Southern Environmental Law Center (SELC): The SELC along with co-signatories Appalachian Voices, Southern Appalachian Mountain Stewards and the Appalachian Citizen's Law Center, Inc. submitted extensive comments regarding the proposed permit and asserted among other things that the DEQ has misapplied Clean Water Act requirements by limiting the discharge solely on the basis of the regulatory requirements of the State Water Quality Standards (9 VAC 25-260) and applicable federal effluent guidelines. They recommended that the DEQ should adopt specific technology based case-by-case effluent limitations for the discharge which represent best available technology economically achievable. The SELC objected to the application of mixing zones to calculate the WQBELs citing that it enables the use of dilution in the stream to meet the limits rather than developing case specific technology based limits. Additionally, the SELC contends that the permit is not consistent with Virginia's anti-degradation policy because it authorizes pollutant discharges in excess of the ambient water quality criteria, and it objected to the procedures that the agency uses to apply "anti-degradation baselines" to assess compliance with the policy. The SELC also commented that additional protective measures for the intake structure and cited by the USFWS should be implemented to ensure protection of the federally listed species.

b. Virginia Conservation Network (VCN): Representatives of the VCN presented oral comments at the public hearing and also submitted written comments during the public comment period. Among their comments were that the permit should include more stringent technology based effluent limitations using "best professional judgment" (BPJ) which are based on best available technology. They also objected to the use of mixing zones in the development of the limits, and asserted that the permit is not compliant with the anti-degradation policy. They additionally recommended stricter limits for a number of pollutants and recommended more frequent monitoring and lower quantification levels for pollutants. They cited the Dominion Bremo permit as an example.

c. The Nature Conservancy (TNC): Local Nature Conservancy staff attended both public information sessions and the public hearing. They submitted written comments which were generally supportive of the draft permit and of the efforts that the Department and the company have made to ensure the protection of the Clinch River resources. However, in an effort to secure additional protections of its unique aquatic life, TNC provided additional recommendations for the permit including: the adoption of a time-of-year restriction for the dewatering operation to a period of minimal biological activity; more restrictive monitoring and reporting requirements using lower quantification levels; the requirement of more frequent WET testing and the inclusion of a mussel species in the WET testing. TNC also questioned the use of mixing zones in waters considered to have resident T&E species indicating that further improvements to the habitat may occur if a mixing zone is not allowed.

4) APCO Comments: The applicant submitted a number of comments regarding specific modifications and requests regarding minor details of the permit, but the majority of their concerns addressed the 316(b) conditions contained in the permit. Copies of the written comment documents are available in their entirety by contacting Staff.

Summary of DEQ Response: The Clinch River Plant has an existing wastewater treatment facility which has a history of producing a high quality effluent from a number of waste streams including ash contact water and landfill leachate. The proposed dewatering wastewater is a small relative volume and the treatment plant has sufficient capacity to treat the additional wastewater. The DEQ staff has developed a very restrictive permit to address both the potential discharges influenced by the dewatering operation and the long term operational discharges from the gas fired power plant, and the DEQ staff is confident that the permit is sufficient to protect the water quality standards and beneficial uses of the receiving stream. The proposed effluent limitations for both phases are water quality based effluent limits using very conservative assumptions developed in accordance with agency regulations in order to provide a high degree of certainty that the ambient water quality standards will be maintained at all times up to a potential simultaneous occurrence of maximum discharge concentration and maximum discharge flow during extreme drought flow conditions. Although many comments were presented requesting that more restrictive technology based limitations that are based upon the ability of the system to treat the wastewater be assigned to the discharges, the DEQ staff has determined that adoption of site specific BPJ limitations are unwarranted. The wastewater stream represented by the pond dewatering was considered in EPA's promulgation of the effluent limitation guidelines for the steam electric category, and a separate "state level" evaluation of BPJ would be duplicative. Furthermore, the analytical results from the many years testing for the potentially toxic metals of concern indicate that the level of treatment necessary to remove copper from the discharge also produces a wastewater quality that does not exhibit a reasonable potential to contravene the standards for the other water quality standards pollutants. Many comments also suggested that the application of a "mixing zone" in the development of the WQBELs is not sufficiently protective of the water quality standards, is not sufficiently protective of potential resident T&E species and conflicts with the agency's anti-degradation policy. Mixing zone concepts are routinely used in the assessment of potential impacts from discharges and such use is authorized by the regulation under 9VAC25-260-20 and the published EPA Technical Support Document. The draft permit includes effluent limits that are consistent with DEQ's application of the Antidegradation Policy contained in 9VAC25-260-30.A.2. Effluent limits for the dewatering phase of operations are established that allocate no more than 25% of the unused assimilative capacity for aquatic life toxic criteria and no more than 10% of the unused assimilative capacity for human health criteria under a combination of extreme conditions (i.e. 10-year drought flow, maximum effluent flow, 97th% effluent concentration, etc.), that are expected to occur much less frequently than the once in 3-year exceedance interval allowed by the WQS. By limiting the waste load allocations to a small percentage of the remaining assimilative capacity under such a conservative combination of conditions, DEQ assures that there is no significant lowering of water quality under any conditions reasonably expected to occur. In recognition of the comments requesting additional protective measures for T&E species, DEQ staff revisited their evaluation of reasonable potential for all phases of the operation using more restrictive "regulatory mixing zone" assumptions in lieu of the typical assessment procedures for existing discharges. The re-assessment resulted in the lowering of the copper limit from 39 parts per billion to 37 parts per billion, and a proposed ammonia limit from 11 mg/L monthly average and 15mg/L daily maximum to 7.6 mg/L monthly average and daily maximum. However, even under this tighter scrutiny of a restricted mixing zone, the "reasonable potential" evaluation using recent data from the operation does not indicate that additional WQBELs are necessary for any other water quality standard pollutant. A number of the comments requested that additional protective measures be required at the intake structure to ensure the protection of T&E species, and the comments referenced the suggestions made by the USFWS. In recognition of these concerns, the DEQ staff modified the information requirements for the next permit term to include the data requirements of facilities which withdraw much larger volumes (i.e. > 125 MGD). This data will be required to be presented during the next reissuance cycle and will be utilized in the final BTA determination. The staff presented this proposal to the USFWS, and the staff agreed that it would be sufficient to provide the data requested in their comments. More specific details and the complete DEQ response to all relevant comments may be found on page 15.

Draft Permit Changes
Proposed changes in the draft permit are identified below.

Part I.A.1 • Copper Effluent Limit: The monthly average and daily maximum effluent limitations for copper have been modified from 39 ug/L to 37 ug/L to reflect changes in wasteload allocations associated with the establishment of a 350 foot Regulatory Mixing Zone.
• Ammonia Effluent Limit: The effluent limits for ammonia have decreased from 11 mg/L monthly average and 16 mg/L daily maximum to 7.6 mg/L monthly average and 7.6 mg/L daily maximum to reflect changes in wasteload allocations associated with the establishment of a 350 foot Regulatory Mixing Zone.
• Selenium Monitoring: Monthly selenium monitoring has been added to the permit in response to reduced wasteload allocations associated with the establishment of a 350 foot Regulatory Mixing Zone.
Part I.A.2 • This condition has been modified to clarify that the effluent limits associated with this section of the permit only apply to stormwater management activities that occur after the initiation of dewatering activities below the elevation of 1554.0 feet.
Ammonia Effluent Limit: The effluent limits for ammonia have decreased from 11\ mg/L monthly average and 16 mg/L daily maximum to 2.2 mg/L monthly average and 7.6 mg/L daily maximum to reflect changes in wasteload allocations associated with the establishment of a 350 foot Regulatory Mixing Zone.
• WET Testing: Modified the monitoring frequency from monthly to once during the first week of dewatering, once during the second week of dewatering, and monthly thereafter. This modification will allow for earlier assessment of potential toxicity of the discharge associated with the dewatering operation.
• Selenium Effluent Limit: Decreased the selenium monthly average limit from 6.7 ug/L to 6.6 ug/L based on changes to the wasteload allocation when taking into account selenium loading from Dumps Creek into the Clinch River.
• Changed the monitoring frequency for aluminum, barium, beryllium, boron, cobalt, molybdenum and vanadium from 1/month to 3/week for in response to public comment and for consistency with the monitoring frequency for the CCR related metals that have numeric criteria and effluent limits. Subsequently, the sample type for each of these metals was changed from 24 HC to 4 HC.
• Modified the sample type from 24 HC to 4 HC for chloride and hardness since these two parameters are to be sampled 3/week.
Part I.B.11 Removed reference to Outfall 005. This outfall has been physically removed and no longer exists. It was removed during the installation of the natural gas distribution line.
Part I.B.14 In response to public comment, and for consistency with other coal ash dewatering related VPDES permits across the state, the Quantification Levels associated with the permit have been modified as follows:

Effluent Parameter	Initial Draft Permit QL (ug/L)	Revised Draft Permit QL(ug/L)
Total Recoverable Copper	10	5.0
Chromium	10	5.0
Total Antimony	250	5.0
Total Arsenic	150	5.0
Total Cadmium	1	1.0
Total Chromium III	100	5.0
Total Chromium VI	10	5.0
Total Lead	20	5.0
Total Mercury	1	0.1
Total Nickel	20	5.0
Total Selenium	5	5.0
Total Silver	3	0.4

Part I.B.19 Attachment A referenced in this condition was inadvertently left out of the Initial Draft Permit. Attachment A is included in the Revised Draft Permit. Part I.B.20 Cease Dewatering Requirement: This condition has been modified to require the permittee to cease pumping dewatering wastewaters from Pond 1A/1B to the reclaim pond in the event of a limit exceedance. The Initial Draft Permit required the permittee to stop pumping wastewater from the reclaim pond to the AWWTP in the event of a limit exceedance. However, the permittee suggested modifying this condition since there are multiple waste streams that flow to the reclaim pond, and flexibility is needed in managing the elevation in the reclaim pond to prevent inadvertent untreated discharge from Outfall 001.
Part I.C.3.c and Part I.C.3.e WET Testing: Modified the monitoring frequency from monthly to once during the first week of dewatering, once during the second week of dewatering and monthly thereafter. This modification will allow for earlier assessment of potential toxicity of the discharge
associated with the dewatering operation.

Part I.E.3 The modification to this condition included a change in the timing of the required submittal from 270 days prior to permit expiration to 180 days prior to permit expiration. This modification was made at the request of the permittee. Additionally, the reference to the federal regulation was made more specific.

Changes to the Factsheet

Item 9 Removed reference to facility's use of groundwater well for potable water since this is no longer accurate.

Item 13 Corrected Clinch River drought flow estimates displayed in this section since they were not accurate and were not consistent with updated drought flow estimates utilized in the evaluation of wasteload allocations.

Item 20 Corrected the WET NOEC TUc value presented in the Initial Factsheet for the D003 dewatering operation.

Item 22 Based on a 2014 bathymetric survey, the permittee estimated the volume of water remaining in Pond 1A/1B to be 4.3 MG. However, based on a recent 2016 bathymetric survey, the company estimates the volume to be 2.7 MG. The staff added reference to the new estimate in the factsheet.

Item 24 and 25 Updated description of Outfall 005 indicating the outfall has been removed.

Item 25 • Referenced change to permit condition Part I.B.14 involving the lower QL values proposed.

• Referenced change to permit condition Part I.E.3.

Item 27.B Corrected references in the factsheet to the corresponding effluent limit section.

Appendix A Updated pertinent sections to reflect the changes in effluent limits and monitoring based on the establishment of a 350-foot Regulatory Mixing Zone and the modified background concentrations for selenium taking into account loading from Dumps Creek.

Appendix B Updated pertinent sections to reflect reduced ammonia and selenium limits, changes to sampling frequencies, and changes to sampling type.

Appendix H • Updated MSTRANTI for Outfall 003 (normal operations) to reflect the application of the 350-foot Regulatory Mixing Zone, the increased background concentration for selenium based on Dumps Creek loading, and incorporation of the Clinch River specific copper criteria calculations.

• Updated MSTRANTI for Outfall D003 (dewatering operations) to reflect the increased background concentration for selenium based on Dumps Creek loading, and incorporation of the Clinch River specific copper criteria calculations.

• Updated MSTRANTI for Outfall 007 to reflect the increased background concentration for selenium based on Dumps Creek loading, and incorporation of the Clinch River specific copper criteria calculations.

Appendix I This section was updated to incorporate ammonia loading from Outfall 003 into the Clinch River in determining the appropriate background concentration of ammonia in the evaluation of Outfall 008. This reevaluation did not change the conclusion arrived during development of the Initial Draft Permit that an ammonia limit on Outfall 008 is not required.

Appendix J This appendix regarding 316(b) was updated to include the submitted comments from USFWS, EPA, and AEP during the public comment period.

Summary of Comments and DEQ Responses
VPDES Permit No. VA0001015 – Clinch River Plant

The following is a summary of the comments received during the public comment period for the proposed draft permit for the reissuance of the VPDES permit for the Appalachian Power Company Clinch River Plant. The public notice of the permit began on April 1, 2016. A public hearing was held on May 4, 2016, and the public comment period ended on May 19, 2016. Comments are organized according to topic where possible. Individual comments are itemized and included on page 15. The version of the proposed permit which was public noticed for review and comment April 1, 2016, is hereafter referred to as the Initial Draft Permit ("Initial Draft"). The version of the proposed permit being presented to the State Water Control Board for consideration is hereafter referred to as the Revised Draft Permit ("Revised Draft").

1. Mixing Zones:

• Legality

• High Concentrations of Pollutants within the Mixing Zone

• T&E

Many commenters objected to the agency's use of mixing zones in establishing the "end-of-pipe" effluent limitations for potentially toxic materials. The commenters cited that this allows the dilution from the river to attain compliance with the water quality standards, and that the use of a mixing zone may result in a "toxic mixing area" which may be harmful to aquatic life and in particular threatened and endangered species.

DEQ Response:

The Clean Water Act does not prohibit states to establish mixing zone requirements and allowances within the state's water quality standards. Virginia established the requirements and allowances with regard to mixing zones in 9VAC25-260-20.B. The utilization of mixing zones to establish the water quality based effluent limitations proposed in the draft permit are in conformance with both federal and state laws and regulations. DEQ's mixing zone modeling uses well-established mixing zone concepts that are consistent with EPA's Technical Support Document for Water Quality-Based

Toxics Control. A discussion of the process used to calculate effluent limits is included in the fact sheet along with the results of the modeling. DEQ uses a steady state model with conservative inputs for receiving stream flow (10 year drought conditions), discharge flow (maximum flows), effluent hardness, etc. This combination of conservative assumptions results in effluent limits which are protective of water quality under any conditions reasonably expected to occur. The Virginia Water Quality Standards requires that mixing zones assumptions utilized in the development of wasteload allocations that would not prevent movement of or cause lethality to passing and drifting aquatic organisms. In evaluating both the discharges associated with dewatering and normal operations at Outfall 003 under standard DEQ protocol, complete mix assumptions were determined to be appropriate provided that no more than 45.29% of the 1Q10 flow was utilized. In other words, the baseline requirements of mixing zones are met when developing wasteload allocations under significantly more liberal assumptions. Given the sensitive nature of the Clinch River serving as habitat for multiple state and federal listed threatened and endangered species, a more conservative approach was utilized to develop wasteload allocations for the dewatering operation in the Initial Draft Permit. Based on public comment and concern, the more conservative mixing zone assumptions were applied to both the dewatering operation and normal operations resulting in stricter wasteload allocations for normal operation discharges at Outfall 003. The facility is a historically existing source, and the initial draft permit, like all previous permits, was based upon a reasonable potential analysis which was performed using a complete mix assumption and other factors associated with assessment as a Tier 2 water with an existing discharge. After consideration of the comments, the staff re-evaluated the reasonable potential analysis for the operational phase (post dewatering) of 003 using the more restrictive regulatory mixing zone concepts utilized for the dewatering phase. This more restrictive assessment resulted in a reduction of the copper limit from 39 ug/L to 37 ug/L. Likewise, the more restrictive assessment indicated that a monthly average and daily permit limit of 7.6 mg/L would be necessary for ammonia during non-dewatering operations. The effluent limitation proposed in the initial draft permit for both the dewatering phase and normal operation phase was based on a complete mix assumption. Therefore, the more restrictive ammonia limit will be applied to the dewatering phase of operations as well. The presence of ammonia in the discharge at Outfall 003 is associated with the now decommissioned ash transport system. The facility utilizes a NOx reduction system that injects urea/ammonia into the stack. Prior to the conversion to gas, the facility also utilized an electrostatic precipitator to remove coal ash from the air emissions. Prior to being decommissioned the electrostatic precipitator would inadvertently capture ammonia from the stack along with the coal ash resulting in ammonia becoming entrained in the ash transport system. The ammonia would arrive in the AWWTP during the "blow down" of ash transport wastewater. With the exception of the upcoming dewatering operation, DEQ does not anticipate that ammonia will be discharged from Outfall 003 in the future; however, given the concern expressed during the public comment period regarding the effects of ammonia on threatened and endangered mussels, DEQ will continue to include an effluent limit for ammonia.

The more restrictive assessment also indicated that a permit limit may be necessary for selenium based upon historic data. However, the presence of selenium in the wastewater is considered to be associated with CCR contact. Recent Selenium analyses from samples collected from the discharge after ceasing discharges from the ash pond indicated values in the range 1.0 ug/L to 5.4 ug/L. The staff does not anticipate a significant presence of selenium in the discharge after the conclusion of dewatering. However, the revised draft permit will contain a monitoring requirement for selenium to confirm this assumption. If future data indicates the need for a selenium limit, the permit will be modified to include limits for these two pollutants.

Proposed Changes: The Revised Draft Permit will include a reduction of the copper limit from 39 ug/L to 37 ug/L for both the monthly average and daily maximum during normal operations (non-dewatering). The Revised Draft Permit has reduced the ammonia limit for both the normal operations and the dewatering operation to reflect the establishment of the 350 foot regulatory mixing zone for normal operations. For the dewatering phase, the ammonia limit has been reduced from 11 mg/L monthly average and 15 mg/L daily maximum to 2.2 mg/L monthly average and 7.6 mg/L daily maximum. For normal operations the ammonia limit has been reduced from 11 mg/L monthly average and 15 mg/L daily maximum to 7.6 mg/L monthly average and 7.6 mg/L daily maximum. The staff had added to Revised Draft Permit a monitoring requirement for selenium for Outfall 003 under normal operations as a result of the reevaluation of wasteload allocations under the application of a regulatory mixing zone.

2. Antidegradation:

Several commenters including the SELC and VCN asserted that the complete mix assumption for calculating the antidegradation baseline is improper and conflicts with established agency guidance. The SELC specifically asserts that the anti-degradation baseline be applied at the edge of the regulatory mixing zone instead of with a 100% of the stream flow. Additionally, commenters assert that the protocol established in agency guidance allowing for the allocation of no more than 25% of the unused assimilative capacity for toxic criteria and no more than 10% of the unused assimilative capacity for human health criteria contradicts the plain wording of the regulatory Antidegradation Policy.

DEQ Response: The Initial Draft included effluent limits that are consistent with DEQ's application of the Antidegradation Policy contained in 9VAC25-260-30.A.2. Effluent limits for the dewatering phase of operations are established that allocate no more than 25% of the unused assimilative capacity for toxic criteria and no more than 10% of the unused assimilative capacity for human health criteria under a combination of extreme conditions (i.e. 10-year drought flow, maximum effluent flow, 97th percentile effluent concentration, etc.), that are expected to occur much less frequently than the once in 3-year exceedance interval allowed by the WQS. One should also consider the magnitude of effect relying upon the conservative combination of extreme conditions referenced above has on the calculation of wasteload allocations. For example, consider the effect of utilizing drought river flows in the calculation of wasteload allocations versus using normal expected flows. In this permit the staff utilized a 1Q10 value of 25 MGD to calculate acute wasteload allocations. If, for example, the staff utilized normal expected flows (harmonic mean of 155 MGD) to calculate acute wasteload allocations, the acute wasteload allocations and subsequent effluent limitations would be approximately 6 times higher than those proposed in the draft permit. The margin of safety realized in the use of drought flows versus normal expected flows alone is very significant. By limiting the waste load allocations to a small percentage of the remaining assimilative capacity under such a conservative combination of extreme conditions, DEQ assures that there is no significant lowering of water quality in the Clinch River under any conditions reasonably expected to occur.

Proposed Changes: None

3. Technology Based Limits:

Several commenters suggested that the water quality based effluent limitations are insufficient to protect the receiving waters and that the DEQ should adopt more stringent "technology based effluent limitations" based upon the facilities ability to treat the wastewater source. Several commenters cited that the effluent from the facility should be required to meet health department drinking water standards and maximum concentration limits instead of water quality based effluent limitations.

DEQ Response: The facility is regulated by 40CFR Part 423, Federal Effluent Guidelines and Standards for the Steam Electric Power Generating Point Source Category. Updated Part 423 federal effluent guidelines (FEGs) were published by EPA as a final rule in the Federal Register on November 3, 2015. The discharge of "legacy" wastewaters, as proposed by AEP, are specifically addressed in the preamble to the FEGs, and are regulated as best available technology economically achievable (BAT) at 40CFR §423.13. The Preamble refers to legacy wastewaters as:

"...wastewater generated prior to the date determined by the permitting authority that is as soon as possible beginning November 1, 2018, but no later than December 31, 2023... Under this rule, legacy wastewater must comply with specific BAT limits, which EPA is setting equal to the previously promulgated BPT [best practicable control technology currently available] limits on TSS in the discharge of fly ash transport water, bottom ash transport water, and low volume waste sources." In establishing the BAT limits for legacy wastewaters in its final rule, EPA explicitly rejected technologies other than surface impoundments due to the lack of adequate data, and the way legacy wastewaters are handled at steam electric power generating plants. Technology-based treatment requirements (Best Professional Judgment) may be developed at the state level in the absence of applicable federal technology-based effluent limits (40CFR 125.3(c)). The Federal Regulations (40CFR 125.3(d)) further prescribe methodologies for setting technology-based limitations, which are the same factors EPA is required to consider in the development of FEGs. Under these regulations DEQ does not have the authority to arbitrarily prescribe treatment technology requirements without going through the appropriate evaluations, including factors such as cost benefit analyses and non-water quality environmental impact (i.e. energy requirements, etc.). Because the EPA has just undertaken this effort as described above, DEQ does not believe that the same exercise at the state level will yield different results.While the facility has demonstrated an ability to treat the effluent to drinking water quality for the pollutants associated with CCR; DEQ does not have the authority to impose this requirement on the permittee. Therefore, DEQ implemented the standard protocol developing water quality based effluent limits for the proposed dewatering operation for those CCR related pollutants not limited by the Federal Effluent Guidelines. Water quality based effluent limits proposed in the draft permit are designed to be protective of the Virginia Water Quality Standards (WQS) which establish the beneficial uses of all waters in the Commonwealth and the narrative and numeric criteria necessary to ensure water quality is maintained and protected. Those beneficial uses include recreation, e.g., swimming and boating; the propagation and growth of a balanced, indigenous population of aquatic life; wildlife; and the production of edible and marketable natural resources (e.g., fish and shellfish). These WQS are adopted as regulation (9VAC25- 260 et. seq.), and represent the best available science to ensure protection of water quality. These WQS also allow for the use of mixing zones in evaluating limits for VPDES permits. The allowance for any mixing may result in "end of pipe" effluent limits above the water quality criteria applicable to the receiving stream. The WQS include criteria to protect aquatic life from acute (1-hour) and chronic (4 day) exposures. The WQS also include criteria to prevent human health impacts from consumption of fish over a period of years. If the effluent limits that are based on acute and chronic criteria are attained then aquatic life in the receiving waters will be fully protected consistent with the WQS. Water quality criteria are designed to protect aquatic life are based on a careful, systematic collection of all toxicity information

available for the toxic substance. Following established guidelines, these data are carefully reviewed to determine which toxicity data are from acceptable scientific studies, conducted using established protocols and which have been determined to provide acceptable, unambiguous toxicity data suitable for calculating water quality criteria. Both acute and chronic criteria are based on all available toxicity data and are designed to protect almost all of the species for which sound quality toxicity information is available. EPA develops draft water quality criteria, subjects them to internal and external peer reviews and then subjects them to public comment periods, adjusting the criteria as needed based on public comments. The adjusted criteria values are again subjected to public comments and possibly additional adjustments before issuing them as final, recommended national water quality criteria. States are expected to propose these criteria for adoption as state water quality criteria and the state again subjects these proposed criteria to public review and comment. In this way, water quality criteria are developed by trained environmental scientists and technicians, using standardized protocols. The draft criteria are subjected to internal and external peer reviews, and then subjected to several, repeated rounds of public review and comments on both the national level and on the state level, oftentimes adjusting the criteria based on public comments. In this way, once a water quality criterion is officially adopted, the criterion represents the best scientific consensus of allowable concentrations of the potentially toxic substance that will prevent lethal effects as well as less serious effects such as reduced growth or reproduction. Water quality criteria are designed to be protective and waters with concentrations at or lower than the chronic criterion concentration should ensure a healthy diverse community of aquatic life. Acute criteria provide protection to aquatic life from severe toxic effects that can cause death, generally when exposed for two to four days. At a minimum, acute criteria are designed to protect all but the 5% most sensitive species from any lethal toxic effects. Even the most sensitive species may suffer some impairment but not death if exposed to the acute criterion. In some cases, a criterion is lowered to protect even the most sensitive species if it is determined to be an important species. The acute criterion is designed to protect both adult and early life stages from lethal toxicity. Chronic criteria provide protection against long-term exposures that could cause adverse effects on reproduction and/or growth of early life stages of aquatic life: Chronic criteria are designed to protect against less severe, non-lethal toxic effects such as reduced growth or reduced reproductive success which might occur over prolonged periods of exposure. The chronic criteria are based on long term toxicity tests starting with very early life stages of aquatic life; eggs, embryos, larval stages and other early life forms. Often, these early life stages are more sensitive that the adults or juveniles and toxic effects are observed at lower concentrations. By using the toxicity sensitivity of these early life forms as the basis for the chronic criteria, the criteria are designed to take into consideration spawning and reproduction, development of eggs and growth of larval and juvenile fish and other aquatic life. If the chronic criteria are not exceeded for extended periods of time, then spawning and reproduction should be protected. DEQ establishes water quality based effluent limits to protect instream water quality criteria which can be exceeded, on average, once every three years. The effluent limits were calculated using once in ten year drought river flows, maximum effluent flows, 97% percentile effluent concentrations and conservative hardness assumptions ensuring that aquatic life water quality criteria should be maintained even during extreme low flow conditions in the Clinch River. The return interval for all of these conservative assumptions occurring simultaneously is far longer than the once per three years exceedance rate allowed by the WQS regulation. In summary, with the exception of those pollutants for which a technology based limit is published in the Federal Effluent Guidelines, DEQ has implemented the well-established and time tested protocol utilized across the state to develop water quality based effluent limitations that will be protective of human health and the environment.

Proposed Changes: None

4. Concerns Over Drinking Water Protection

Several commenters have expressed concern over the safety of the proposed dewatering operation with respect to the downstream public water supply surface water intakes.

DEQ Response: During the public comment period for the reissuance of the draft permit, the DEQ staff received comments regarding the sufficiency of the permit limits in protecting the downstream water intakes on the Clinch River, and several parties suggested that the effluent limitations associated with the permit should be at concentrations consistent with drinking water standards. The WQS regulation identifies and designates certain stream segments as Public Water Supply (PWS) waters where additional criteria apply which have been calculated to protect human health from toxic effects through drinking water consumption. PWS waters are also subject to additional criteria to maintain acceptable taste, odor, and aesthetic quality of drinking water, and these criteria apply at the drinking water intake. Because the Clinch River in the vicinity of the APCO- Clinch River Plant is not designated by the water quality standards as PWS water, application of the PWS criteria the initial draft permit was not required by federal and state law in evaluating discharges associated with this facility nor necessary to protect the designated beneficial uses of the Clinch River. However, in response to the public comment and the fact that the discharges associated with this permit are located approximately 12 miles upstream of the water supply intake for the Town of St. Paul (PWSID No. 1195700), the DEQ staff re-visited its assessment of the discharge with specific emphasis on determining the potential impact to downstream users. This re-assessment considered the following factors:

a. There is an additional 25% flow at the water supply intake in St. Paul as compared the flow rate estimated at Outfall 003 at the AEP Clinch River Plant, allowing for further dilution of the effluent prior to withdrawal;
b. Quarterly downstream monitoring within the Clinch River (3.7 miles downstream of the discharge) performed by DEQ under the Clinch Powell Clean Rivers Initiative have yielded results that indicate that the concentration of the pollutants of concern associated with CCR dewatering operations are within the EPA Drinking Water MCL concentrations;
c. A review of the data submitted with the application indicates that the facility routinely produces an effluent water quality that complies with the accepted drinking water MCL's; and
d. The Virginia Department of Health has reviewed draft permit and has no comments, and have identified no specific issues with any downstream water supplies.
Therefore, the conclusion of this re-assessment of the potential impact to water users is that the existing permit is sufficiently restrictive to protect downstream water users.
In response to public concern over drinking water protection, staff contacted VDH to discuss the issue further. The VDH staff indicated that further review of the proposal did not raise any specific concerns given the proposed volumes and levels of treatment of the wastewater; however the VDH staff did suggest that the company be required to notify the closest downstream public water source (i.e. Town of St. Paul) of the initiation of de-watering so that the operators can have advance notice of any potential change in raw water characteristics.
Proposed Changes: DEQ has decided to modify special condition Part I.B.18 to require the permittee to also notify the Town of St. Paul regarding the initiation of dewatering.

5. Special Importance of the Clinch River

Several commenters have cited the special importance of the Clinch River serving as habitat to many threatened and endangered species, and serving as an important resource to economic redevelopment in the region. DCR Division of Natural Heritage cites that this section of the Clinch River is part of the Clinch River – Little River Stream Conservation Unit with a biodiversity ranking of B1 which represents a site of outstanding significance. DGIF has designated the Clinch River as a "Threatened and Endangered Species Water" with 35 associated species. USFWS has stated that federally listed species known to occur in the Clinch River near the APCO facility that may be affected by its operation include the following:
Federally Listed Threatened:
• yellowfin madtom (*Noturus flavipinnis*)
Federally Listed Endangered:
• Cumberlandian combshell (*Epioblasma brevidens*)
• oyster mussel (*Epioblasma capsaeformis*)
• snuffbox (*Epioblasma triquetra*)
• shiny pigtoe (*Fusconaia cor*)
• fine-rayed pigtoe (*Fusconaia cuneolus*)
• cracking pearlymussel (*Hemistena lata*)
• birdwing pearlymussel (*Lemiox rimosus*)
• sheepnose mussel (*Plethobasus cyphyus*)
• slabside pearlymussel (*Pleuronaia dolabelloides*)
• fluted kidneyshell (*Ptychobranchus subtentum*)
• rough rabbitsfoot (*Quadrula cylindrica strigillata*)
• Cumberland monkeyface (*Quadrula intermedia*)
• purple bean (*Villosa perpurpurea*)
• Cumberland bean (*Villosa trabalis*)
USFWS also cites that the reach of the Clinch River where the facility is located, critical habitat has been designated for the Cumberlandian combshell, oyster mussel, slabside pearlymussel, fluted kidneyshell, rough rabbitsfoot, and purple bean and may be affected by facility operation. Several commenters have cited that work is underway in an effort to establish a state park along the Clinch River, and that the Clinch River is an important resource to economic redevelopment for the region through eco-tourism, boating, and fishing.
DEQ Response: DEQ is well aware of the concerns regarding freshwater mussels, T&E species, and water quality in the Clinch River. In 2008, DEQ joined with EPA, Tennessee Department of Environment and Conservation (TDEC), and the Virginia Department of Mines, Minerals, and Energy (DMME) in signing a Memorandum of Understanding to study water quality and mussel health in the Clinch River. This MOU formed the basis for the Clinch Powell Clean Rivers Initiative (CPCRI) which includes representation from 20+ organizations including federal and state regulatory and advisory agencies, non-governmental organization and private industry, all focused on the scientific study of the Clinch River to assess mussel health. DEQ staff have served as members of the steering committee, healthy watersheds team, and science team where DEQ staff has participated in water quality surveys of the Clinch River including a six year bimonthly

sampling effort at 5 locations along the river to assess low level metal concentrations. Currently, as members of the science team, DEQ staff are participating in a second study that involves additional quarterly sampling efforts at six new locations to further study concentrations of metals based on the results generated during the first study. Additionally, DEQ has undertaken a special effort for benthic surveys within the Clinch River on both Virginia and Tennessee. DEQ samples 30 locations along the Clinch River and its tributaries to assess benthic macroinvertebrate health. The results of both the chemical and benthic sampling indicate that the main stem of the Clinch River meets or exceeds the Virginia Water Quality Standards for metals concentrations and aquatic life use. The CPCRI members recognize there are still issues with mussel health within the Clinch River and its tributaries, and are continuing to perform further sampling and analysis to determine the causative factors. DEQ has also participated in an intensive low level mercury study funded partially by Dominion to evaluate the effects of atmospheric deposition of mercury in the Clinch River watershed. The study involved quarterly sampling at 5 sites along the Clinch River. As noted above, DEQ has been very involved in the growing body of science surrounding the Clinch River mussels and the effects of various pollutants on aquatic health; therefore, DEQ staff are very aware of the issues surrounding aquatic life health within the Clinch River, and has strived to ensure that the proposed permit will be protective of water quality, human health, aquatic life, and the beneficial uses of the Clinch River.
Proposed Changes: See Item 1 above describing the establishment of a regulatory mixing zone for the normal operation discharges at Outfall 003

6. Pollutant specific comments:

• **Copper:** The Nature Conservancy commented that freshwater mussels are particularly sensitive to copper and that effluent limits should be set at values equal to toxicity thresholds set by EPA without reliance upon mixing zones.
DEQ Response: The staff has re-assessed the discharge with respect to copper limits and has revised the permit limit in the Revised Draft Permit. The more restrictive mixing zone assumptions associated with the establishment of a 350 foot regulatory mixing zone were applied to the calculation of the copper wasteload allocations for the normal operation discharges through the AWWTP. This reevaluation resulted in a reduced effluent limitation for copper during the normal operation from 39 ug/L monthly average and daily maximum to 37 ug/L monthly average and daily maximum. As explanation to the only minor decrease in the copper effluent limit in reevaluating the limit with respect to the regulatory mixing zone, the original water quality based copper limit of 39 ug/L established decades ago utilized wasteload allocations based on much higher effluent flow values and lower drought flow estimates. Drought flow estimates used in determining wasteload allocations both in the past and in the current permitting process were affected by the water withdraw flows at the facility. As effluent flows decreased and estimated drought flows increased (as a result of reduced water withdraw rates) through the years, the appropriate wasteload allocations for copper at the time increased. However, to be in compliance with DEQ's anti-backsliding policy, DEQ has carried forward the original 39 ug/L copper limit, rather than establish less restrictive copper limits in each subsequent permit reissuance. For this reissuance, DEQ is establishing a 350 foot regulatory mixing zone that resulted in lower wasteload allocations and associated effluent limits for copper.
Proposed Changes: The Revised Draft Permit includes a reduced effluent limitation for copper during the normal operations from 39 ug/L monthly average and daily maximum to 37 ug/L monthly average and daily maximum.

• **Selenium:** The USFWS commented that the calculation of WLA values for selenium at Outfall 003 should also take into account loading of selenium into the Clinch River from Dumps Creek.
DEQ Response: After utilizing a mass balance equation to determine the potential resultant background selenium concentration in the Clinch River as a result of the selenium loading from Dumps Creek, the assumed background concentration in the Clinch River goes from <0.5 ug/L to 0.63 ug/L. In the initial draft permit, staff utilized a max background concentration of 0.5 ug/L in place of <0.5 ug/L, even though actual concentrations of selenium upstream of outfall and Dumps Creek are likely lower than 0.5 ug/L. The resultant WLAa associated with the dewatering operation is lowered from 31 ug/L to 30 ug/L, and the resultant WLAc associated with the dewatering operation is lowered from 8.4 ug/L to 8.3 ug/L. These result in a monthly average effluent limitation of 12 ug/L and a daily maximum effluent limitation of 6.6 ug/L as compared to 12 ug/L and 6.7 ug/L, respectively, proposed in the initial draft permit. DEQ has updated the factsheet and draft permit to reflect this change to the selenium limit associated with the dewatering operation. Additionally, wasteload allocations for selenium were reevaluated utilizing the loading of selenium from Dumps Creek during normal operations. See Item 1 discussing the need for selenium monitoring during normal operations discharges at Outfall 003.

• **Ammonia:** USFWS and TNC had commented that freshwater mussels are particularly sensitive to ammonia and that effluent limits should be set at values equal to toxicity thresholds set by EPA without reliance upon mixing zones.
DEQ Response: The staff has re-assessed the discharge with respect to ammonia limits and has revised their permit limits in the revised draft permit. The more restrictive mixing zone assumptions associated with the establishment of a 350 foot regulatory mixing zone were applied to the calculation of the ammonia wasteload allocations for both the dewatering operation and normal operation discharges through the AWWTP. This reevaluation resulted in a reduced the effluent

limitation for ammonia during the dewatering operation from 11 mg/L monthly average and 15 mg/L daily maximum to 2.2 mg/L monthly average and 7.6 mg/L daily maximum. For normal operations the ammonia limit has been reduced from 11 mg/L monthly average and 15 mg/L daily maximum to 7.6 mg/L monthly average and 7.6 mg/L daily maximum. • **Outfall 008 Ammonia**: USFWS requested clarification as to whether the loading of ammonia from Outfall 003 was considered in determining whether or not an ammonia limit for the sanitary sewage treatment plant discharge at Outfall 008 was necessary.

DEQ Response: DEQ reevaluated the need for an ammonia limit for Outfall 008 taking into consideration the loading associated with Outfall 003 and determined that Outfall 008 would not require an ammonia effluent limitation. The factsheet has been updated to reflect this reevaluation.

• **Aluminum:** TNC provided comment suggesting the inclusion of monitoring for aluminum for Outfall 003 during normal operations. They cite that scientific literature suggests that fresh water mussels exhibit stress to aluminum at concentrations of 300-500 ug/L.

DEQ Response: In reviewing the data provided with the permit application, the AWWTP produces a long-term average concentration of 131 ug/L and a maximum of 289 ug/L. Given that the maximum concentration of aluminum observed in the effluent prior to mixing with the receiving stream is below that which may result in stress to mussels, and that there are no WQ criteria established for aluminum, DEQ has determined that additional monitoring for aluminum is unwarranted.

• Why does DEQ allow the limits associated with certain parameters revert to less strict concentrations once the dewatering operation is complete? Why are a number of parameters removed from the effluent limitations once dewatering is complete?

DEQ Response: DEQ evaluated the dewatering wastewaters as a "new discharge" to a Tier 2 water body. This requires that wasteload allocations be developed to achieve antidegradation baselines within the receiving stream. The wasteload allocation calculations for normal operation discharges were consider "existing discharges". Existing discharges are considered part of the baseload of the waterbody and therefore the wasteload allocations are developed to achieve the water quality numeric criteria in the receiving stream. The reason the majority of the metals for which effluent limitations were developed for the dewatering phase of operations do not require effluent limitations during normal operations is because the analysis of past data generated during normal operations did not indicate the need for effluent limitations for those metals based on a reasonable potential analysis. The facility will continue to conduct semi-annual screenings for those pollutants listed in Attachment A of the permit to determine whether concentrations for each pollutant are at levels that necessitate an effluent limitation.

7. Threatened and Endangered Species Protection:

Many commenters recognized the proximity of the discharge to known populations of federally listed fish and mussel species and suggested that the permit does not contain sufficient protections for T&E species. Several comments also suggested that a mixing zone for pollutants should not be allowed in areas with resident T&E species populations.

DEQ Response: The facility and the industrial discharges from the operation have existed for over 50 years. Even though there was a catastrophic failure of the ash pond in 1967 which reportedly decimated the aquatic community for many miles downstream, the river has recovered significantly, and is supporting a diverse aquatic community. The recovery of the river is likely due, in no small part, to the changes in the watershed and improvements made at many facilities which have resulted after the passage of the Clean Water Act. It is undisputed that the installation of the Advanced Wastewater Treatment Plant has improved water quality conditions downstream. The Advanced Wastewater Treatment Plant was designed specifically to remove copper from the waste stream because copper was a known toxicant to mussel species inhabiting the Clinch River. The process to remove copper in the discharge also reduces many other metal compounds. During each reissuance process after the construction of the AWWTP, the Department has assessed the wastewater quality of the discharge from the plant and no other water quality standards listed pollutants have exhibited a reasonable potential to contravene the water quality standards of the stream. The facility has had an exemplary history of operation of the treatment plant and compliance with the effluent limitations. Each evaluation was performed using the Department's established procedures of compounding conservative assumptions of discharge flow, drought stream flow, and maximum concentration, and no discrete pollutant has been identified which may contravene the standards. Therefore, the Department is confident that this permit, as well as all previous permits has always been sufficiently protective of water quality. However, given the statewide concern for the preservation of water quality during the proposed closure of ash ponds, the staff proposed a more restrictive evaluation of dewatering wastewater, and artificially imposed water quality based limitations based upon anti-degradation baselines for pollutants whose levels would not necessarily have risen to levels considered to pose a "reasonable potential" to contravene the numeric water quality standards. The effluent limits established for the dewatering phase are based upon limiting the zone of initial dilution to a potential maximum area of approximately 0.28 acres in size during the modeled worst case conditions. The proposed water quality based limits are based on the water quality numeric criteria included in the Virginia Water Quality Standards for each pollutant of concern.

The water quality criteria are based on all available, reliable toxicity information for a wide variety of diverse species of aquatic life, and because the most sensitive species drive the calculation of the criteria, all organisms typically thrive when WQS are maintained. It is assumed that species that have never been used in toxicity tests with the substance have sensitivities within the range of the tested species. All of the tested species act as surrogates for untested species. It is assumed that any species of special importance such as those listed as threatened and endangered species, but which are not in the toxicity dataset will share a level of sensitivity close to one of the tested species. Because of this, it is either assumed or demonstrated, based on the species considered during criteria development, that threatened and endangered species will also be protected by a nationally recommended water quality criterion. Scientific studies that indicate certain species may have greater sensitivity to a particular pollutant should be brought forth in the next triennial review of the Virginia Water Quality Standards for possible incorporation into the regulations and subsequent incorporation into future permitting actions. DEQ believes that the reissuance of this permit is sufficiently restrictive and will not destroy or adversely modify critical habitat as it existed at the time of the federal designation. The results of this reasonable potential analysis conducted for the reissuance of the existing VPDES Permit concluded that the additional water quality based effluent limitations are not necessary to protect the water quality of the receiving stream. DEQ believes that effluent discharge from this facility meets the requirements of the Water Quality Standards and the VPDES permit regulation and does not violate either the federal
Endangered Species Act or the Virginia Endangered Species Act.

Proposed Changes: As discussed in Item 1, DEQ has reevaluated the non-dewatering discharge under normal operations utilizing the regulatory mixing zone of 350 feet as had been done in the initial draft permit for the dewatering phase of operations. This resulted in a slight decrease to the copper and ammonia limits for Outfall 003. This reevaluation also indicated that selenium monitoring was necessary to determine whether a selenium limit will be required once dewatering is complete.

8. Adequacy of the AWWTP to Treat the Ash Pond Dewatering Wastewaters:

Commenters have expressed concern as to whether the AWWTP is capable of processing the dewatering operation wastewaters that may have higher concentrations of pollutants than previous wastewaters processed by the AWWTP.

DEQ Response: The treatment system to be utilized during the dewatering operation is the Advanced Wastewater Treatment Plant (AWWTP) that was installed at the power station in 1993 for metals reduction. While DEQ has not had to address an ash pond dewatering operation specifically in the past at this facility, a very similar wastewater streams have historically been treated through the AWWTP. These wastewater streams include the blow-down of the coal ash transport system and the ash landfill leachate. In the past when coal was utilized, the bottom ash generated in the boilers was mixed with water to generate a slurry of ash and water. The slurry was routinely pumped to the west end of Pond 1. The water and ash slurry would flow eastward in the ash pond allowing time for the majority of the solids to settle out of suspension. The water would then travel through a decant structure located at the east end of Pond 1 and flow through pipe to the reclaim pond to be recirculated back into in the ash transport system. A portion of the water would be "blown down" into the AWWTP for treatment and then discharged into the Clinch. This blown down ash transport water is very similar in nature to the proposed dewatering wastewater in that it had full contact with ash prior to treatment in the AWWTP. It is also similar in flow rate contribution to the AWWTP. The historic water balance at the plant included 0.15 MGD contribution of blown down ash transport water to the AWWTP. The proposed dewatering operation includes a 0.18 MGD contribution of dewatering wastewater to the AWWTP. Keep in mind that the AWWTP has a design capacity of approximately 8 MGD, while the total discharge from the AWWTP during the dewatering operation is limited to 4.84 MGD (to include a variety of other wastewaters generated at the power plant). We have years of screening data demonstrating the effectiveness of the AWWTP to handle the blow down of ash transport water, which indicates that the AWWTP is more than capable of handling the wastewater generated during the dewatering operation. A review of past data indicates that the AWWTP is very effective at producing a high quality effluent.

9. Monitoring Requirements:

a. **Quantification Levels:** Several commenters have suggested that we utilize lower Quantification Levels in the permit to allow for a more detailed assessment of the efficacy of the AWWTP and potential impacts to the Clinch River. In particular, certain commenters have suggested that DEQ utilize Quantification Levels equal to those found in the recently issued VPDES Permit No. VA0004138 for the Dominion – Bremo Power Station. Commenters also suggested that rather than substituting zero in place of <QL reported concentrations in the calculation of monthly averages that DEQ substitute ½ QL in place of < QL reported concentrations.

DEQ Response: DEQ staff have taken this comment under consideration and modified the revised draft permit with Quantification Levels equal to those specified in the VPDES permit for the Bremo Bluff Power Station. Since the quantification levels of many parameters have been significantly lowered, DEQ has determined it is not necessary to diverge from standard protocol in the calculation of monthly averages.

b. **Frequency of chemical testing and reporting:**

• Several commenters have suggested that during the period of dewatering that monitoring for those CCR metals for which Virginia has numeric criteria published in the WQS be increased from 3/week to 1/day.
DEQ Response: The AWWTP has been in use since 1993 and we have ample data demonstrating its efficacy in removing these pollutants. Furthermore, given the capacity of the system and the equalization provided within, the variability of sampling data is anticipated to be minimal. As such, DEQ has determined that sampling the above referenced metals 3/week is more than adequate to determine permit compliance and treatment efficacy.
• Commenters have suggested those CCR related metals for which there are no numeric criteria published within the WQS should be sampled 3/week rather than 1/month as proposed in the initial draft permit.
DEQ Response: DEQ has considered this suggestion and decided to modify the draft permit to incorporate 3/week sampling for the above referenced metals. Subsequently, since these metals will be sampled 3/week rather than monthly as proposed in the Initial Draft Permit, DEQ has modified the sample type from 24 hour composite to 4 hour composite for consistency with those CCR metals for which we have assigned effluent limitations. • Several commenters have suggested a more rapid turnaround time for the 3/week parameters.
DEQ Response: The initial draft permit proposes these samples receive sampling results within 4 days of the sample being taken. This is a non-customary requirement placed on this permit and others across the state dealing with ash pond dewatering in response to public concerns. Typical turnaround times for samples taken under VPDES permits are generally measured in weeks rather than days. To require quicker than turnaround timeframes than 4 days is not practical or warranted.
• The USFWS suggested that the sampling frequency for ammonia during normal operations be 1/week rather than 1/month as proposed in the initial draft permit.
DEQ Response: Since the source of ammonia to the AWWTP and Outfall 003 will be eliminated with the conclusion of Pond 1A/1B dewatering and closure, DEQ has determined that a 1/Month monitoring frequency is adequate to evaluate ammonia concentrations within the effluent.

c. Frequency of WET testing and reporting:

Several commenters have suggested that WET testing for D003 (dewatering operation) should be conducted on a higher frequency (daily, weekly, or biweekly) compared to 1/Month as required in the initial draft permit. DEQ also received suggestions that WET testing should be stacked towards the initiation of dewatering operations so that toxicity issues would be identified early in the process before the majority of the dewatering wastewater was treated and discharged.
DEQ Response: Staff have taken these suggestions under consideration and modified the draft permit to require WET testing be conducted once during the first week of dewatering, once during the second week of dewatering, and monthly thereafter. Higher testing frequencies during the remainder of the dewatering operation and subsequent ash contact stormwater management was determined to be unwarranted based on the long history of non-toxicity associated with the AWWTP under conditions in which the treatment system treated ash transport wastewater along with various other wastewaters generated at the plant.

d. Use of alternate species for WET testing:

Several commenters suggested the use of early life stage native freshwater mussels be included in the WET testing requirements to assess potential toxicity of the effluent from the AWWTP during the dewatering operation.
DEQ Response: All whole effluent toxicity testing is proposed to be performed using standard invertebrate and vertebrate species (i.e. *Ceriodaphnia dubia* and *Pimephales promelas*). The procedures for the tests have been standardized and are universally accepted as meeting the regulatory requirements. The Department has not approved WET testing using alternate species such as the early life stages of freshwater mussels as recommended in the comment. Therefore, any such testing would be done outside of the permit requirements.

e. Baseline and ongoing sampling of the Clinch River for water quality, sediment quality, ecological health and fish tissues (SELC)

SELC and other commenters suggested that DEQ require baseline and ongoing monitoring of the Clinch River for water quality, sediment quality, ecological health and fish tissues.
DEQ Response: The water quality-based effluent limitations proposed in the permit are designed to adhere to the Virginia Water Quality Standards under extreme conditions. Given the very conservative assumptions utilized to generate the proposed effluent limitations, additional instream monitoring is unnecessary. Furthermore, as discussed above regarding DEQ's involvement in the Clinch Powell Clean Rivers Initiative (CPCRI), DEQ remains involved in the growing body of science regarding the effects of water quality on the overall ecological health of the Clinch River.

10. 316(b) (Cooling Water Intake Structures) Requirements:

During the initial review of the application materials the USFWS provided recommendations to DEQ that: 1) the mesh size of the intake screens be reduced from 3/8 inch to 1 millimeter; 2) that the through screen velocities of the intake be reduced to 0.25 feet per second, and; 3) the implementation of a monitoring program to monitor impingement and entrainment. The initial draft permit did not incorporate the recommendations for alterations to the intake structure,

because the modifications would have required major structural changes to the intake in order to maintain sufficient withdrawal volumes for the continued operation of the plant. A special condition was included in the initial draft permit which required the company to submit an annual report (Part I.E.6) of the federally-listed threatened or endangered species found to have been impinged or entrained during the reporting year, including the total number and type of organisms (listed by taxa), and life stage cycle (egg, larva, juvenile, adult) impacted by injury or death. However, the special condition did not include the specificity of the monitoring program recommended by USFWS. In their comments on the initial draft permit, the service recommended that the 316(b) information submittals by APCO include an Impingement Mortality and Entrainment Characterization Study and provided additional details on the data needs necessary to establish a baseline for evaluating IM&E.

A summary of the 316(b) comments are listed below:

• Comment, Part I.E.6, Measures to protect Federally-listed T&E species, designated critical habitat, and fragile species or shellfish: The monitoring requirement in the draft permit lacks monitoring of impingement and entrainment developed cooperatively with the USFWS. The permittee should be required to conduct an "Impingement Mortality and Entrainment Characterization Study" 1/week for 1 year to determine if federally listed species are being impinged and entrained by the intake structure. (DCR, USFWS, SELC, VCN):

DEQ Response: Monitoring of T&E species under §316(b) of the CWA is limited to determining compliance and effectiveness of any additional control measures deemed necessary to minimize adverse environmental impact. The interim BTA measures proposed in Part I.E.1 of the permit may be interpreted as establishing additional control measures necessary for the protection of federally listed T&E species that may be located in the vicinity of the cooling water intake structure. On July 16, 2015, during the initial review of the application materials, the USFWS provided recommendations to DEQ that the following additional control measures were necessary to ensure protection of federally-listed species: 1) reduce the mesh size of the intake screens from 3/8 inch to 1 millimeter; 2) reduce the actual through-screen velocities of the intake to 0.25 feet per second, and; 3) implement monitoring of impingement and entrainment. On October 21, 2015, a meeting was held at the Clinch River Plant site attended by USFWS, DEQ, and APCO staff to discuss the USFWS's July 2015 comments. At this meeting, the USFWS staff verbally indicated they would withdraw recommendations to reduce the mesh size of the intake and actual through-screen velocities of the intake in exchange for the company agreeing to perform impingement and entrainment monitoring. However, USFWS staff were unable to provide a description of the scope, frequency, duration, or other specifications of monitoring that would satisfy their concerns. USFWS staff were informed that open-ended monitoring recommendations would not be appropriate for inclusion in a proposed permit. To ensure clear, consistent, necessary and enforceable permit conditions, specific monitoring details would be necessary. The USFWS provided no subsequent follow-up to DEQ of recommended monitoring plan specifications until May 19, 2016, following preparation and public notice of the initial draft permit. Consequently, the draft permit was prepared without customized special conditions addressing specific impingement or entrainment monitoring plan requirements. The May 19, 2016 comments from the USFWS recommended that an "Impingement Mortality and Entrainment Characterization Study" with impingement mortality sampling conducted for 24-hours each week for one year. In addition, the USFWS recommended entrainment sampling to occur weekly for a one year period. No basis or cost/benefit analysis was provided to support their recommended sampling duration or frequency. In their May 19, 2016 comments, the USFWS recommended the scope of the "Impingement Mortality and Entrainment Characterization Study" to include:

a. Taxonomic identification of all life stages of fishes and mussels and any species protected under Federal or State law (including threatened or endangered species) that are in the vicinity of the water intake structure(s) and are susceptible to impingement and entrainment, including a description of their abundance and temporal and spatial characteristics in the vicinity of the water intake structure(s). These may include historical data that are representative of the current operation of the facility and of biological conditions at the site; and b. Documentation of the current IM&E of all life stages of fishes, mussels, and any species protected under Federal or State Law (including threatened or endangered species) and an estimate of IM&E to be used as the calculation baseline. Impingement mortality and entrainment samples to support the calculations required must be collected during periods of representative operational flows for the water intake structure and the flows associated with the samples must be documented. Recommended sampling for impingement mortality is one 24-hour sampling event 1/week (on same day of each week) for 1 year and for entrainment 1/week for 1 year.

Paragraph a., above, is comparable to the application information requirements of 40CFR §122.21(r)(4) and 40CFR §122.21(r)(9). All existing facilities, including the Clinch River Plant, that are subject to the requirements of 40CFR §§125.94 thru 125.99 must ultimately submit "source water baseline biological characterization data" under 40CFR §122.21(r)(4). The federal Rule establishes such data to include:

• Taxonomic identification of all life stages of species and their relative abundance in the vicinity of the cooling water intake structure;

• Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the cooling water intake structure;
• Identification and evaluation of the primary period of reproduction, larval recruitment, and period of peak abundance for relevant taxa; and
• Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure; Included with their permit reissuance application, AEP completed and provided source water baseline biological characterization data, a copy of which was transmitted to the USFWS on May 22, 2015.

Paragraphs a. and b., above, closely mirror the components of an "Entrainment Characterization Study" as outlined in 40CFR §122.21(r)(9). The components of such a study are to include:

• "…*Characterization of all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal law (including threatened or endangered species), including a description of their abundance and their temporal and spatial characteristics in the vicinity of the cooling water intake structure(s), based on sufficient data to characterize annual, seasonal, and diel variations in entrainment, including but not limited to variations related to climate and weather differences, spawning, feeding, and water column migration. This characterization may include historical data that are representative of the current operation of the facility and of biological conditions at the site*…"
• "…*Documentation of the current entrainment of all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal law (including threatened or endangered species). The documentation may include historical data that are representative of the current operation of the facility and of biological conditions at the site. Entrainment data to support the facility's calculations must be collected during periods of representative operational flows for the cooling water intake structure, and the flows associated with the data collection must be documented*…"

The requirement for Entrainment Characterization Studies to be developed is normally limited to owners or operators of existing facilities that withdraw greater than 125 million gallons per day (MGD) Actual Intake Flow (AIF). 40CFR §122.21(r)(9) also requires the submission of an Entrainment Characterization Study to include a minimum of two years (versus one year) of entrainment data collection, though 40CFR §122.21(r)(9) does not prescribe the frequency of data to be collected. While the Clinch River Plant's AIF is less than 125 MGD, information contained in an Entrainment Characterization Study would be of assistance to DEQ in making a subsequent final BTA determination for the next permit cycle. 9VAC-31-190.H of the VPDES Regulation authorizes the Board to require the permittee to furnish "…*information as may be necessary to accomplish the purposes of the law.*" In addition, 40CFR §125.95(d) authorizes the Director to exercise "…*discretion to request additional information to supplement the permit application*…"

DEQ Response: In response to public comments, DEQ staff recommends that Part I.E.3, "Alternate Schedule for Submittal of 40CFR §122.21(r) Information" be revised to read:

"The permittee shall, by no later than 270 180 days prior to the expiration date of this permit, submit to the DEQ Regional Office all applicable information described in 40CFR §§122.21(r)(2) through (r)(9).

• Comment, Part I.E.6, Measures to protect Federally-listed T&E species, designated critical habitat, and fragile species or shellfish: Modifications to the cooling water intake structure should be required to protect federally listed T&E species, as recommended by the U.S. Fish and Wildlife Service (USFWS): a) The 3/8-inch (9.5 millimeter) mesh openings of the cooling water intake screen are not small enough to protect federally-listed species from being entrained. The intake screens should be retrofitted with a 1.0 millimeter mesh size opening; and b) the facility's design through-screen velocity of 0.52 feet per second (fps) when the water level is low, and 0.15 fps at normal pool elevation is inadequate to protect federally listed species from impingement. The intake structure should be retrofitted so that actual through-screen velocities do not exceed 0.25 fps. DEQ rejected these recommendations as not being "reasonable and prudent" without sufficient explanation (SELC, VCN).

DEQ Response: On July 16, 2015, during the initial review of the application materials, the USFWS provided recommendations to DEQ that the following additional control measures were necessary to ensure protection of federally-listed species: 1) reduce the mesh size of the intake screens from 3/8 inch to 1 millimeter; 2) reduce the actual through-screen velocities of the intake to 0.25 feet per second, and; 3) implement monitoring of impingement and entrainment. On October 21, 2015, a meeting was held at the Clinch River Plant site attended by USFWS, DEQ, and APCO staff to discuss the USFWS's July 2015 comments. The meeting included a field inspection of the cooling water intake structure, the traveling screens, and the facility. At this meeting, the USFWS staff verbally indicated they would withdraw their recommendations to reduce the mesh size of the intake and actual through-screen velocities of the intake in exchange for the company agreeing to perform impingement and entrainment monitoring. In comments subsequently received from the USFWS during the public comment period on May 19, 2016, the USFWS referenced their earlier July 16, 2015 letter, but did not include in their recommendations continued pursuit of reduced screen mesh size and throughscreen velocities. Mesh sizes of 1 mm and maximum intake velocities of 0.25 fps have been routinely applied in Virginia under the Virginia Water Protection Permit (VWPP) program for a number of years. However, those standards have been applied for new

construction or applicant-initiated proposed reconstruction, and not to the retrofitting of existing intake structures where construction activities are not otherwise proposed. The initial draft permit did not include the recommendations for alterations to the intake structure and screens based on the recommendations not meeting "reasonable and prudent" measures. DEQ staff believes the modifications would have required significant changes in the basic design of the cooling water intake structure to maintain sufficient withdrawal volumes for the continued operation of the plant. According to 50CFR §402.14(i)(2) of the Endangered Species Act (ESA) regulations, "*Reasonable and prudent measures, along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes*." The continuity equation (Flow, Q = Cross Sectional Area, A x Velocity, V) may be used to demonstrate that to maintain an equivalent amount of flow to operate the plant, a reduced intake velocity would necessitate additional cross sectional area; in other words, alterations to the basic design by requiring physical enlargement of the intake structure cross sectional opening. Likewise, smaller mesh sizes may subject the screens to more frequent debris fouling and head loss, reducing the effective cross sectional area for water to pass through, thereby increasing through-screen velocities. Replacement of the screen mesh would require retrofitting of two conventional traveling screens, and corresponding re-evaluation of the performance and design of the screen backwash system and individual catch baskets. The retrofitting
would be expected to involve more than minor changes. Consequently, DEQ staff believes the recommendations to reduce screen mesh sizes and intake velocities do not meet the "reasonable and prudent" criteria. No change to the condition is proposed.

• Comment, Part I.E.6, Measures to protect Federally-listed T&E species, designated critical habitat, and fragile species or shellfish: Special Condition Part I.E.6 should require more frequent sampling and reporting than once a year (DCR):
DEQ Response: This special condition reflects a "pass-through" of federal reporting requirements. 40CFR §125.98(k) requires delegated State programs to submit Annual Reports to the EPA Regional Office where additional control measures are established to protect Federally-listed threatened and endangered (T&E) species or critical habitat. In turn, the various State Annual Reports are compiled by EPA and transmitted to the U.S. Fish & Wildlife Service and the National Marine Fishery Services. DEQ staff does not believe there would be any benefit to changing the reporting period to a frequency greater than annually, as doing so will have no impact on EPA's subsequent report submittal to the federal Fishery Services on an annual basis. No change to the special condition is proposed. Note: This special condition does not relieve the permittee from reporting any findings of T&E species as may be required under the federal Endangered Species Act (ESA), which is independently administered by the federal Fishery Services.

• Comment, Part I.E.6, Measures to protect Federally-listed T&E species, designated critical habitat, and fragile species or shellfish and Part I.E.7, Federal Endangered Species Act Compliance: The proposed requirement for the permittee to prepare and submit an Annual Report is not based on any requirement in the final federal rule, and should be removed. 40CFR §125.97(g) allows the permitting authority to impose additional monitoring requirements related to federally-listed species, but only if additional measures are specified in the permit to address specific concerns related to T&E species. No such additional measures have been included in the permit; therefore additional monitoring is not necessary. The proposed condition does not specifically require any sampling or biological monitoring. EPA estimated in its cost-benefit analysis that 99% or more of facilities would not require ongoing monitoring for impingement or entrainment. There are potential detrimental effects in conducting regular biological monitoring on aquatic communities Parts I.E.6 and 7 should be combined and revised to read (AEP):
"*The permittee shall operate and inspect each cooling water intake system in accordance with the terms and conditions of this permit, which are designed to minimize incidental take and reduce or remove more than minor detrimental effects to Federally-listed threatened, endangered, or fragile species and designated critical habitat, including prey base. Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.*"
DEQ Response: 40CFR §125.98(k) requires delegated State programs to submit Annual Reports to the EPA Regional Office when additional control measures are established to protect Federally-listed threatened and endangered (T&E) species or critical habitat. To enable DEQ to prepare its Annual Report to EPA, DEQ must secure pertinent data from the permittees. The interim BTA measures proposed in Part I.E.1 of the permit may be interpreted as establishing additional control measures necessary for the protection of federally-listed T&E species located in the vicinity of the cooling water intake structure. Absent of this condition, the permittee would not be required to report to DEQ any impingement or entrainment performance data (including any "take" information, if discovery were to actually occur) to adequately evaluate the effectiveness of any installed I&E control technologies and the permit's BTA findings. Removal of this requirement may jeopardize the accuracy and adequacy of DEQ's preparation and submittal of an Annual Report to EPA. 9VAC-31-190.H of the VPDES Regulation authorizes the Board to require the permittee to furnish "*…information as may be necessary to accomplish the purposes of the law.*" DEQ staff believes the permittee's preparation and submittal of an Annual Report is warranted to carry out the purposes of the Clean Water Act. In addition, the commenter's replacement language may be interpreted as removing the burden and responsibilities for any incidental take from the permittee. DEQ

staff rejects the replacement language as being inappropriate for a VPDES permit that has not completed a final BTA determination. No change to the condition is proposed.

11. Procedural Requests:

Withdraw of Draft Permit: Several commenters requested that the DEQ withdraw the initial draft permit, revise it to reflect changes in response to comments, and provide a subsequent draft permit and fact sheet for public comment.

DEQ Response: In accordance with State Water Control Law and VPDES permit regulation, DEQ has reviewed the submitted comments and has made revisions to the permit as warranted. The revised draft permit and factsheet will be submitted to the State Water Control Board, along with the public comments and DEQ's response to those comments. The State Water Control Board will review the material and either issue, issue with modifications or deny the reissuance of the permit in accordance with State Water Control Law and VPDES permit regulations. If any member of the public feels the final permit as approved by the State Water Control Board is not in accordance with State Water Control Law and the VPDES permit regulations, they will have an opportunity to appeal the permit decision made by the Board as allowed by the State Water Control Law.

Initiation of Pond Dewatering and Data Notifications: Several commenters requested that initiation of dewatering and subsequent data be made open to the public. They also requested that email notifications regarding the initiation of dewatering and data submittals occur.

DEQ Response: DEQ has committed to posting relevant submittals and rule makings regarding the permit on DEQ's website. DEQ does not have a mechanism to distribute email notifications to interested parties regarding the initiation of dewatering and data submittals. However, as stated above, these items will be made readily available to the public on DEQ's website.

Extension of Comment Period: Commenters have requested an extension of the comment period.

DEQ Response: DEQ has followed the requirements and procedures for public participation established in law and regulation, including requirements to process permitting actions in a timely manner. Consistent with this standard operating practice, it is the agency's decision that the 45-day public comment period was adequate and an extension is not necessary.

12. Miscellaneous Comments:

Time-of-Year Restriction: The Nature Conservancy requested that the dewatering activity only be allowed from December 1 to April 1 when flows are high and biological activity is low. **DEQ Response:** All permit limits for specific pollutants are written to address the simultaneous occurrence of extreme conditions of drought level stream flow and maximum discharge flow. Therefore, further limiting the timing of the discharge is unnecessary.

SolidWaste Permitting Related Comments

a. Ash Disposal Locations / Methods

Several commenters suggest that capping the ash pond in place is not adequate due to concerns over groundwater contamination and seepage into surface waters. The commenters assert that the ash should be excavated and relocated in a lined landfill. One commenter went further to state that lined landfills are also not adequate for the protection of groundwater, and that the material should be encapsulated in cylindrical concrete tanks as had been utilized at the Savannah River Site Saltstone Disposal Facility. One commenter suggested that during the closure process for Pond 1A/1B that the ash should be completely dewatered to a much lower elevation to minimize future groundwater interaction and ensure structural stability of the unit.

DEQ Response: The locations and methods for final ash disposal will be addressed in the forthcoming Solid Waste Permit(s) for the Clinch River Plant. The Solid Waste Permit will include long-term groundwater monitoring and a surface water module to assess the what, if any, impacts the ash disposal option has had on groundwater or surface water. The solid waste permitting process will also include a public information session, public comment period and public hearing similar to VPDES permitting process. The VPDES permit reissuance under consideration only addresses the discharges to surface waters.

AWWTP underflow/sludge management (USFWS): USFWS suggested the permittee be required to develop a sludge management plan for the AWWTP underflow.

DEQ Response: Special Condition Part I.B.15.d requires the permittee to identify in the Operations and Maintenance Manual the "procedures for handling, storing, and disposing of all wastes, fluids, and pollutants characterized in Part I.B.5 that will prevent these materials from reaching state waters." The permittee has indicated in the permit application that the AWWTP sludge will be disposed of at a landfill. It is the responsibility of the landfill operator to ensure the waste is allowable under the solid waste permit under which the landfill is operating.

Discontinue the Stockpiling of Coal at the Facility: The Department of Conservation and Recreation recommended that the stockpiling of coal at the facility be discontinued since coal is no longer utilized at the facility.

DEQ Response: DEQ does not have the authority to require the removal of the coal pile at the facility provided the appropriate VPDES permit coverage for coal pile runoff is sought and granted under VPDES permit regulation.

Cease Dewatering Requirement: Commenters questioned what will happen if an effluent limitation is exceeded and the cease dewatering requirement is exercised.
DEQ Response: As required in special condition Part I.B.20, should an effluent limitation be exceeded during the dewatering operation, the permittee will be required to cease the dewatering operation. The permittee will be required to initiate a review of the treatment operations and data to identify the cause of the exceedance. The permittee will be required to initiate corrective actions to address the cause of the exceedance. The permittee cannot resume dewatering operations until an evaluation report is submitted to DEQ and DEQ grants written authorization to resume dewatering operations.
13. APCO Comments:
The company requested a number of minor changes and/or clarifications in the initial draft permit and fact sheet, principally associated with monitoring requirements, notification requirements and other minor details.
a. AEP requested a change in sampling type for chloride and hardness under D003 from 24 hour composite to 4 hour composite.
DEQ Response: This was an oversight on DEQ's part; as such, we have modified the sampling type from 24 hour composite to 4 hour composite. Given that these two parameters are to be sampled 3/week, it is impractical and unwarranted to sample utilizing a 24 hour composite.
b. AEP requested that the effluent and monitoring requirements for D003 (dewatering operation) apply "during any week in which stormwater that has come into contact with coal ash in Pond 1A/1B has been pumped from Pond 1A/1B below elevation 1554.0'" which corresponds to the pool elevation that is maintained by the current gravity-flow discharge system
DEQ Response: DEQ has taken this comment under consideration and modified the language in Part I.A.2 to clarify that the associated limits and monitoring requirements apply "during any week after the initiation of the dewatering operation in which stormwater that has come into contact with coal ash in Pond 1A/1B has been pumped from Pond 1A/1B below elevation 1554.0 feet."
c. AEP requested clarification regarding special condition Part I.B.18 requiring notification of the initiation of dewatering. They state that the dewatering operation is an intermittent process that will start/stop on multiple occasions
DEQ Response: The intent to the condition as written is to require the notifications to occur only once at the initiation of the dewatering operation. Understanding that the dewatering operation is intermittent, DEQ does not feel it is necessary to require notification each time the dewatering pumps are switched on.
d. AEP pointed out that Attachment A to the permit referenced in special condition Part I.B.19 was inadvertently left out the initial draft permit.
DEQ Response: This was an oversight on DEQ's part. DEQ provided AEP with a copy of Attachment A on May 18, 2016. Attachment A is included in the Revised Draft Permit.
e. AEP requested a modification of the cease dewatering special condition Part I.B.20 to require the permittee to cease pumping wastewater from Pond 1A/1B to the reclaim pond rather than cease pumping from the reclaim pond to the AWWTP in the event of an exceedance of an effluent limitation. AEP's concern is that the reclaim pond also receives other influent flows unrelated to pond dewatering operations such as dike seepage and landfill leachate and that these flows need to be managed as needed to prevent discharge from the reclaim pond via Outfall 001.
DEQ Response: DEQ has taken this comment under consideration and has determined it appropriate to modify special condition Part I.B.20 as requested by AEP. DEQ concurs that AEP needs the flexibility to manage the pool elevation within the reclaim pond as needed to prevent an untreated discharge to the Clinch River of the various wastewaters that are directed to the reclaim pond.
f. AEP commented that Outfall 005 has been decommissioned with the installation of the gas line. They assert that references to Outfall 005 should be removed from the draft permit and factsheet.
DEQ Response: DEQ will remove references to Outfall 005 from the permit, and will modify references to Outfall 005 indicating that the outfall has been physically removed.
g. AEP identified an inaccuracy in Item 9 of the factsheet that indicated a groundwater well provides potable water to the facility.
DEQ Response: DEQ has corrected the reference accordingly.
h. AEP has requested clarification regarding the quarterly sampling of Outfall 015 conducted in accordance with the Ash Pond 2 Closure Plan (Revised May 2012). As indicated in the closure plan, AEP was required to conduct quarterly samples of Outfall 015 for evaluation during the subsequent permit reissuance. AEP requests clarification as to whether the quarterly sampling is to continue during the next permit cycle.
DEQ Response: DEQ will continue to require monitoring for Outfall 015 as indicated in Part I.A.5. DEQ analyzed the results of the quarterly monitoring conducted in accordance with the approved Ash Pond 2 Closure Plan and determined

that a reasonable potential to contravene the water quality standards does not appear to be present. Future groundwater monitoring including a surface water module will likely be required under the solid waste permitting program.

APCO Comments regarding CWA 316(b)

APCO also included a number of comments regarding the 316(b) special conditions in the initial draft permit. These are outlined below:

a. **Comment, Part I.E.2, Impingement and Entrainment Control Technology Preventative Measures**: Permit Special Condition Part I.E.2 should be removed from the permit. No condition similar to this special condition appears in the final rules adopted by EPA. Requirements to develop and implement a specific schedule and procedures for preventative maintenance of impingement and entrainment control technologies, and maintain records of their implementation are unnecessary and duplicative of the inspections and related recordkeeping required by Permit Special Condition Part I.E.4 (AEP).

DEQ Response: Part I.E.2 requires the facility's Operations and Maintenance (O&M) Manual to include procedures and a regular schedule for preventative maintenance of all impingement and entrainment (I&E) control technologies and measures. This special condition is necessary to satisfy 40CFR §§125.96(e), which requires any technologies to be "…*maintained and operated to function as designed*." In addition, Part I.E.2 is necessary to maintain the requirements of the VPDES Permit Regulation. 9VAC25-31-190.E requires the permittee, at all times, to "…*properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit*." DEQ staff believes the requirements of Part I.E.2 are not duplicative to those of Part I.E.4 or other proposed conditions. This special condition is distinguished from Part I.D.3, O&M Manual Requirement in that Part I.D.3 is couched in terms of the treatment works, whereas Part I.E.2 addresses I&E control technologies and measures. Part I.E.2 is further distinguished from Part I.E.4, Visual or Remote Inspections in that Part I.E.4 addresses the identification of any technologies needing maintenance, repair, or replacement during an inspection, whereas Part I.E.2 establishes the standard for the technologies to be actually maintained in effective operating condition. Part I.E.2 also establishes the O&M Manual as the repository for the procedures and schedules for routine preventative maintenance measures; whereas such measures are not addressed in Part I.E.4. No change.

b. **Comment, Part I.D.3, Alternate Schedule for Submittal of 40CFR §122.21(r) Information:** The Alternate Schedule special condition should be changed to conform to the final federal Rule and require the submittal of information outlined in 40CFR §122.21(r) no later than 180 days prior to the expiration of the renewal permit, rather than 270 days prior to expiration (AEP).

DEQ Response: 40CFR §125.95(a) of the federal Rule establishes that the submittal of information outlined in 40CFR §122.21(r) is to be made "…*when applying for a subsequent permit*." DEQ staff interprets this to mean that the §316(b) information submittals will be subject to the determination of whether a reissuance application may be deemed complete. 9VAC25-31-70 allows for continuation of expiring permits so long as the permittee has submitted a timely and complete application for a new permit. 9VAC25-31-100.E establishes a duty to re-apply at least 180 days before the expiration date of the existing permit. The §316(b) submittals represent additional information for DEQ staff to evaluate for adequacy and application completeness. The submittal deadline established for Part I.D.3 was originally established at 270 days prior to permit expiration to provide a buffer for the permittee to ensure their reissuance application (with the additional §316(b) information) is deemed complete by DEQ staff in time to remain eligible for administrative continuance, if subsequently needed. Reducing the submittal timeframe from 270 to 180 days prior to permit expiration would expose the permittee to the potential risk of not being eligible for administrative continuance, should the submittal be deemed deficient or require additional information. If AEP is willing to accept this additional risk, DEQ has no objections to reducing the deadline for submittal from 270 to 180 days prior to permit expiration.

c. **Comment, Part I.E.4, Visual or Remote Inspections:** Subpart (c) should be clarified to allow the estimated actual water withdrawal volumes for the facility to be based on the operating time for the pump and the pump's rated capacity. Subpart (c) should also be revised to add the option to satisfy the monitoring requirements by recording cycles of concentration. Subpart (d) should be deleted, as there are no means of measuring head losses across the intake screens currently in place (AEP).

DEQ Response: Part I.E.4.(c) requires that visual or remote inspection documentation include a "…*description of water withdrawal volumes or rates occurring at the time of the inspection*." There are numerous generally accepted engineering methods or procedures available to derive a description of water withdrawal volumes or rates. Among such generally accepted engineering methods and procedures include water withdrawal estimates based on pump operating times and pump rated capacities. While this particular special condition is not prescriptive in limiting a permittee's methods or procedures options, the condition nonetheless requires all documentation to be ultimately signed and certified in accordance with Part II.K of the permit. Part II.K requires a responsible corporate officer, or a duly authorized representative of that person, to certify that the information is "…*true, accurate, and complete*" and "…*in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted*." The

federal Rule at 40CFR §125.94(c)(1) identifies the monitoring of cycles of concentration as an acceptable option for measuring intake flows This federal requirement is related to the need to conduct daily intake flow monitoring for facilities operating closed-cycle re-circulating systems, such as the Clinch River plant. However, DEQ staff interprets the federal requirement as needing to be applied following a *final* impingement mortality and entrainment best technology available (BTA) determination. Such a final BTA determination is expected to occur during the subsequent permit term, following updates to the VPDES Permit Regulation and submittal of updated information in accordance with the Part I.E.3 Alternative Schedule. Upon a final BTA determination being made, it is anticipated the next permit cycle will include a separate special condition mandating daily flow monitoring with specific language recognizing cycles of concentration as an alternative method. However, during the interim period of this permit cycle, DEQ staff believes there is no need to revise the Part I.E.4.(c) language to specifically recognize this method, as the current proposed permit would satisfactorily allow its use. Part I.E.4.(d) of the proposed permit caveats the requirement for inspection documentation to include head loss across the intake screens only "where available." If such means are not available, then the proposed permit does not require inspection documentation to address head loss. While the permittee may indicate there are no current means in place to measure head losses across the intake screens, there are no guarantees such means may not become available in the future. No change.

Approval of seven TMDL reports, amendment of the Water Quality Management Planning regulation to incorporate the corresponding TMDL wasteload allocations, and approval of eight revisions to errors in the Water Quality Management Planning regulation. Staff will ask the Board to approve portions of seven TMDL Reports and adopt amendments to the state's Water Quality Management Planning regulation. Additionally, staff will ask the Board to approve eight revisions to errors in the Water Quality Management Planning regulation. As of July 1, 2014 TMDL waste load allocations receive State Water Control Board approval prior to EPA approval due to amendments outlined in §2.2-4006.A.14 of the Code of Virginia. The seven TMDL reports have been reviewed by EPA for required TMDL elements, however, remain in draft form awaiting State Water Control Board approval.

Background: The Clean Water Act ("CWA") and the U.S. EPA Water Quality Management and Planning Regulation (40 CFR §130) require states to identify waters that are in violation of water quality standards and to place these waters on the state's 303(d) List of Impaired Waters. Also, the CWA and EPA's enabling regulation require that a TMDL be developed for those waters identified as impaired. In addition, the Code of Virginia, §62.1-44.19:7.C requires the State Water Control Board ("the Board") to develop TMDLs for impaired waters. A TMDL is a determination of the amount of a specific pollutant that a water body is capable of receiving without violating water quality standards for that pollutant. TMDLs are required to identify all sources of the pollutant and calculate the pollutant reductions from each source that are necessary for the attainment of water quality standards.

Every TMDL consists of three basic components. They are the point source component called the wasteload allocation ("WLA"), the nonpoint source component called the load allocation ("LA"), and the margin of safety component ("MOS"). The TMDL is equal to the sum of these three components.

The U.S. EPA's Water Quality Management and Planning Regulation 40 CFR §130.7(d) (2) directs the states to incorporate TMDLs in the state's Water Quality Management Plan. Also, U. S. EPA's Water Quality Management and Planning Regulation 40 CFR§122.44(d) (1) (vii) (B) requires that new or reissued VPDES permits be consistent with the TMDL WLA. This means that the WLA component of the TMDL will be implemented through the requirements specified in the VPDES permits, for example through numeric water quality based effluent limitations or in certain cases best management practices ("BMPs"). Virginia implements the LA component using existing voluntary, incentive and regulatory programs such as the Virginia Agricultural Cost-Share Program and Federal Section 319(h) TMDL implementation funding. Specific management actions addressing the LA component are compiled in a TMDL implementation plan ("TMDL IP").

Proposed Actions: Staff will propose the following Board actions:

Approval of seven TMDL reports, Amendment of Water Quality Management Planning regulation to incorporate thirty-one new WLAs and replace two existing WLAs

1. The report titled, *"TMDLs for Turley Creek (sediment) and Long Meadow Run (sediment and nitrogen) Rockingham County, Virginia,"* proposes sediment reductions for the Turley Creek and Long Meadow Run watersheds and provides sediment waste load allocations of 19.87 tons/year and 27.92 tons/year. In addition, the TMDL report proposes nitrogen reductions for the Long Meadow Run watershed and provides a nitrogen waste load allocation of 520.6 lbs/yr.
2. The report titled, *"Sediment TMDLs for Moores Creek, Lodge Creek, Meadow Creek, and Schenks Branch in Albemarle County and Charlottesville City, Virginia,"* proposes sediment reductions for the Moores Creek, Lodge

Creek, Meadow Creek, and Schenks Branch watersheds and provides sediment waste load allocations of 809.58 tons/yr, 46.25 tons/yr, 452.33 tons/yr, and 134.52 tons/yr.

3. The report titled, *"E. coli TMDL Development for South Fork Holston River in Smyth and Washington Counties, VA,"* proposes *E. coli* reductions for the South Fork Holston River watershed and provides an *E. coli* waste load allocation of 7.52E+12 cfu/yr.
4. The report titled, *"Bacteria Total Maximum Daily Load (TMDL) Development for the Mattaponi River Watershed Located in Orange, Spotsylvania, Caroline, King William, and King and Queen Counties, Virginia,"* proposes *E. coli* reductions for the Brock Run, Chapel Creek, Doctors Creek, Glady Run, Maracossic Creek, Mat River, Matta River, Mattaponi River, Motto River, Po River, Polecat Creek, Poni River, Reedy Creek, and Root Swamp watersheds and provides *E. coli* waste load allocations of 3.09E+10 cfu/yr, 1.25E+12 cfu/yr, 3.24E+11 cfu/yr, 1.85E+11 cfu/yr, 5.24E+12 cfu/yr, 1.94E+11 cfu/yr, 2.14E+12 cfu/yr, 6.16E+12 cfu/yr, 6.48E+10 cfu/yr, 1.46E+12 cfu/yr, 1.56E+11 cfu/yr, 2.93E+12 cfu/yr, 2.08E+11 cfu/yr, and 5.15E+11 cfu/yr.
5. The report titled, *"Bacteria TMDL Development for East Wilderness Creek, Kimberling Creek, Nobusiness Creek, Town Creek, and Walker Creek in Bland and Giles Counties Virginia,"* proposes *E. coli* reductions for the East Wilderness Creek, Kimberling Creek, Nobusiness Creek, Town Creek, Walker Creek segment 1, Walker Creek segment 2, and Walker Creek segment 3 watersheds and provides *E. coli* waste load allocations of 1.89E+11 cfu/yr, 1.96E+12 cfu/yr, 1.38E+12 cfu/yr, 1.73E+12 cfu/yr, 2.70E+12 cfu/yr, 3.45E+12 cfu/yr, and 3.10E+11 cfu/yr.
6. The report titled, *"E. coli TMDL Development for Wolf Creek and Tributaries in Giles, Bland and Tazewell County, VA,"* proposes *E. coli* reductions for the Wolf Creek Headwaters and Wolf Creek watersheds and provides *E. coli* waste load allocations of 6.82E+10 cfu/yr and 1.14E+11 cfu/yr.
7. The revised report titled, *"Bacteria Total Maximum Daily Load Development for North Fork Hardware River and Hardware River,"* proposes revised *E. coli* reductions for the North Fork Hardware River and Hardware River watersheds and provides revised *E. coli* waste load allocations of 0.06E+12 cfu/yr and 0.02E+13 cfu/yr.

The specific portions of the TMDL reports to be approved include the TMDL itself and all the TMDL allocation components, the pollutant reduction scenarios, implementation strategies, reasonable assurance that the TMDL can be implemented, and a summary of the public participation process.

The process for amending the Water Quality Management Planning regulation is specified in §2.2-4006A.14 and §2.2-4006B of the Code of Virginia. The amendments consist of adding thirty-one new WLAs and two revised WLAs that are included in TMDL reports reviewed by EPA. Staff will therefore propose that the Board, in accordance with §2.2-4006A.14 and §2.2-4006B of the Code of Virginia, adopt the amendments to the Water Quality Management Planning regulation (9 VAC 25-720).

Approval of eight revisions to incorporate technical corrections to the Water Quality Management Planning regulation - Potomac-Shenandoah River Basin (9VAC25-720-50.A), Tennessee-Big Sandy River Basin (9VAC25-720-90.A), and Chesapeake Bay-Small Coastal-Eastern Shore River Basin (9VAC25-720-110.A)

Approval, in accordance with §2.2-4006A.14 and §2.2-4006B of the Code of Virginia, of these revisions to the Water Quality Management Planning regulation (9 VAC 25-720)

Report on Facilities in Significant Noncompliance: There were no new facilities reported to EPA on the Quarterly Noncompliance Report as being in significant noncompliance for the quarter ending December 31, 2015.