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FINAL ENVIRONMENTAL ASSESSMENT

**WASHINGTON COUNTY SERVICE AUTHORITY
REQUEST FOR SECTION 26a APPROVAL TO
CONSTRUCT AN INTAKE IN
SOUTH HOLSTON RESERVOIR (TRACT NO. SH 737F)
SOUTH FORK HOLSTON RIVER MILE 72.5R
NEAR THE CONFLUENCE OF THE
MIDDLE FORK HOLSTON RIVER**

WASHINGTON COUNTY, VIRGINIA

TENNESSEE VALLEY AUTHORITY

NOVEMBER 2006

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WASHINGTON COUNTY SERVICE AUTHORITY REQUEST FOR SECTION 26a APPROVAL TO CONSTRUCT AN INTAKE IN SOUTH HOLSTON RESERVOIR (TRACT NO. SH 737F) SOUTH FORK HOLSTON RIVER MILE 72.5R NEAR THE CONFLUENCE OF THE MIDDLE FORK HOLSTON RIVER WASHINGTON COUNTY, VIRGINIA

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The Proposed Decision and Need

The Washington County Service Authority (WCSA) proposes to construct a new 12 million gallon per day (MGD) raw water intake and pump station (intake structure) at South Fork Holston River Mile (SFHRM) 72.5 right bank (R), about 150 feet upstream of the confluence of the Middle Fork Holston River (MFHR). See Figure 1. The project would involve construction of an access road and bridge to access and enter a 40-foot by 50-foot pump station. The project would affect land owned by the WCSA over which the Tennessee Valley Authority (TVA) owns the right to flood and prevent certain uses (Tract No. SH 737F). The purpose of the proposed intake is to provide increased withdrawal capacity for the Washington County Water Treatment Plant in order to meet future municipal water supply demands. As plans evolved since the early 1990s, WCSA revised its requested withdrawal, and more details of the current proposal are provided below (see Background Section).

Construction of the intake structure in the river and access bridge in the floodplain of South Fork Holston River (SFHR) (South Holston Reservoir) would constitute permanent obstructions; therefore, approval under Section 26a of the TVA Act is required. TVA must decide whether or not to approve this project and under what conditions (if any) to issue the required section 26a permit.

Background

In March 1991, WCSA submitted state and federal permit applications for a new water supply project. The original proposal was for dual or split system, which included construction of a new intake at Middle Fork Holston River Mile (MFHRM) 0.1 and a second one at SFHRM 72.5R. From both of these sources, a total of 12 MGD could be withdrawn. This project was initially approved by the Virginia Marine Resources Commission (VMRC) Permit No. 91-0420 in May 1992; however, because of the way the intake was designed and proposed to be constructed, TVA determined at that time that it would not exercise Section 26a jurisdiction. TVA also determined that the proposed action did not conflict with its flowage easement rights on Tract No. SH 737F. Since the original project was not constructed, the VMRC permit expired on May 31, 1995.



Figure 1. Approximate Location of the Proposed Washington County Service Authority Raw Water Intake at South Fork Holston River Mile 72.5R, Upstream of the Confluence of the Middle Fork Holston River

WCSA eventually submitted another application in August 2003. This proposal was to use the existing MFHR water treatment plant to treat water from an existing intake near MFHRM 5.0 left bank (L) (upstream and above South Holston Reservoir pool limits) and the proposed SFHR intake at SFHRM 72.5R (within the South Holston Reservoir summer pool elevation limits but above winter pool elevation). In addition, WCSA requested that the maximum allowable withdrawal capacity of the existing MFHR intake be increased from 4.6 MGD to 11.5 MGD. The total withdrawal from either the existing MFHR or the proposed SFHR intakes would total 12 MGD. However, having such raw water withdrawal capacity from both rivers would provide enhanced reliability and flexibility depending on flow and water quality conditions at the time at either site. For reasons explained below, expanded withdrawal capacity at the existing MFHR site as proposed was viewed as unacceptable.

During the review of the 2003 proposal, WCSA began informal consultation under Section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service (USFWS). Because of the potential for adverse impacts from increased withdrawals on federally listed aquatic species known from the vicinity of the existing intake at the MFHRM 5.0 site, WCSA submitted a revised application in September 2005. Based on the latest water demand projections, the maximum daily water demand within Washington County is estimated to be 11.6 MGD by year 2030. This revised application requested construction of a 12 MGD intake at the SFHRM 72.5 site and eliminated the MFHR site from further consideration. Raw water from this SFHR source would be treated at WCSA's existing water treatment plant at MFHRM 5.0.

The effects of this current proposal are the focus of this Final Environmental Assessment (EA), particularly potential project impacts on historical properties. The USACE issued a Nationwide Permit under section 404 of the Clean Water Act for this revised project proposal. The USACE has determined that its actions would not affect historic properties and has categorically excluded its permitting action.

Other Environmental Reviews and Documentation

Other previous actions, or ones currently under consideration in the geographic area, are as follows. In 1997, TVA issued an EA for the remediation of lead contamination at the former Appalachian Smelting and Refining Company site on Cave Springs Branch, SFHRM 62.5L, South Holston Reservoir, Sullivan County, Tennessee. The removal action was conducted in cooperation with the U.S. Environmental Protection Agency and completed in the fall of 1998. TVA presently has two requests under review, and EAs, in cooperation with other federal and state agencies, are in progress or are being considered. Laurel Marina and Yacht Club, located along the right bank at SFHRM 56.5 in Sullivan County, Tennessee, has proposed to expand its present harbor limits marina facilities. Virginia Department of Transportation (VDOT) is presently widening a 1-mile segment of U.S. Highway 58 from Abingdon eastward to Damascus. This project includes crossings of Fifteen Mile Creek and several other unnamed streams and VDOT has received all the state and federal permits. The timing of improvements to the remainder of this stretch of US 58 is unknown.

Alternatives and Comparison

This EA considers three alternatives: (1) No Action, (2) the Proposed Action, and (3) the Proposed Action with Mitigation. As indicated in the Background Section above, WCSA

has considered various sources and alternative locations of intakes to satisfy Washington County's water supply needs over the years.

Under Alternative 1 - No Action, WCSA would continue to rely on its current water sources. WCSA has determined, however, that these sources will not meet the future water demand and its ability to increase withdrawal from its existing intakes is limited because of environmental and other concerns. Not having access to the new water sources would require purchases from other surrounding utilities, would negatively impact the health and welfare of residents in the area, would and hamper economic growth throughout Washington County.

Under Alternative 2, the Proposed Action, a new raw water intake with 12 MGD capacity and pump station (intake structure) would be constructed at SFHRM 72.5R, about 150 feet upstream of the confluence of the MFHR (Appendix B of Attachment 1). WCSA would also construct a road and bridge to access the pump station.

At the intake location, the shallow depth of the river during winter would require the excavation of the river bottom to create a sump from which water would be pumped. The intake structure would be located in the reservoir approximately 18 feet from the reservoir targeted summer pool elevation of 1,729 feet msl. The access bridge to the intake structure would begin on the shore at about elevation 1,750 feet msl, extend approximately 90 feet into the reservoir, and have a deck elevation of 1,743 feet msl. When the reservoir is at full pool, the lower portion of three of the access bridge support columns would be underwater. None of the bridge columns would be submerged during the annual wintertime reservoir drawdown.

The intake structure would be located in the floodway of the SFHR and, therefore, susceptible to effects from streamflow carrying rocks, trees, and other debris during flood events. To mitigate this problem, WCSA would build the back of the intake structure of steel-reinforced concrete, strong enough to withstand forces from rocks and other debris that may reasonably be expected during a significant flood event. In addition, the upstream face of the intake structure would be triangular in shape, which would act to prevent debris from being trapped on the upstream side. The shape of the upstream side of the intake structure would also reduce the dynamic forces imposed on the structure by debris in the water moving past it. The intake structure would be constructed so that its dimensions would be approximately 40 feet by 50 feet at a maximum. It would be equipped with barrel-type passive screens (see discussion below). The pumps and electrical equipment would be located in the intake structure above the 100-year flood elevation.

The proposed intake uptake-flow velocity would be low (0.25 feet per second). Submerged passive 1-millimeter mesh screens would be located where water could be withdrawn from at least two levels. Second (upper) tier inlets would be located at elevation 1,719 feet msl. This allows for withdrawals from the upper water column during summer when bottom conditions are more likely to be anaerobic. These screens would protrude from the downstream face of the intake, preventing damage by debris that may be carried by the stream. Screen cleaning would be accomplished by back flushing with water. Sediment accumulated on the face of the screens or in the sump outside the wet well would be periodically flushed back into the river. Occasionally, based on design specifications, small amounts of sediment from the wet well would be pumped to the water treatment plant for removal during the treatment process. This should preclude the need for manual cleaning of the wet well and a subsequent sludge disposal problem.

Under Alternative 3, the Proposed Action with Mitigation, the water intake facility would be constructed as described above under Alternative 2 and WCSA would implement measures described in a Memorandum of Agreement (MOA) to mitigate impacts to an archaeological site in the project area. Terms of this MOA are described below. This alternative would meet the water supply needs of WCSA, as would Alternative 2, while mitigating the adverse impacts on cultural resources. Alternative 3 is TVA's preferred alternative.

TVA believes these alternatives cover a reasonable range of actions that address the purpose and need for the WCSA project in this setting. Compared to other locations on this site, constructing the proposed intake structure at the river's edge would require less excavation and, thus, the area that would have to be excavated for the needed archaeological investigations would be reduced. Design features for the project minimize impacts on archaeological resources and more evaluation of avoidance strategy would occur with initiation of groundwork. Impacts of the proposal on SFHR (and South Holston Reservoir), TVA's flowage easement rights, and the 100-year floodplain would also be minimized. WCSA also proposes to mitigate the effects of its intake on unavoidable archaeological resources.

Affected Environment and Evaluation of Impacts

Existing Conditions

The WCSA intake would be located at SFHRM 72.5R, about 150 feet upstream of the confluence of the MFHR. The site lies in southwest Virginia within the Ridge and Valley Physiographic Province. The province is generally characterized as having steep mixed-hardwood-forested, northeast to southwest trending ridges with a diversity and abundance of fish and terrestrial wildlife. The forest and lesser plant communities and wildlife species in this area are common to the region. The majority of the site is located at the base of a rolling forested ridge (Figure 1). Broader valleys throughout the area have historically supported and continue to support a variety of agriculture uses, including cattle production and cropland. Topography in the area ranges from rolling to hilly with some areas along the rivers being moderately steep.

The intake would be located in the upper reach of South Holston Reservoir. The width of the reservoir at full pool at this location is about 320 feet. The TVA reservoir operating guide projects an annual operating range of elevation 1,729 feet mean sea level (msl) in summer to approximately 1,708 feet msl in winter.

Construction of the intake would occur within the limits of the SFHR 100-year floodplain. This generally includes the area lying below elevation 1,737 feet msl. The 500-year flood elevation at the proposed intake site is 1,742 feet msl. The stream bottom at the site is at elevation 1,709 feet msl.

Impacts Evaluation

The two action alternatives, Alternatives 2 and 3, have no potential to impact natural features such as terrestrial or aquatic listed as endangered species; wetlands; prime or unique farmland; groundwater; or unique or important terrestrial wildlife habitats. With the exception of minor, insignificant visual effect to the nearby Norfolk and Western Railroad bridge, part of the Virginia Creeper Trail, potential effects are also not anticipated for parklands such as state or national forests; trails; greenways; wilderness areas; or scenic or other ecologically critical areas. No change in transportation or traffic patterns in the

surrounding rural landscape it anticipated. Based upon design features, the access bridge and intake structure (pump house) would not occupy more than one-third the width of the SFHR channel and not constitute a hazard to navigation. The intake structure would be appropriately marked to warn recreational boaters of any underwater hazard. Noise levels during construction and operations of the facility would not cause a nuisance to any surrounding residents. Other than normally expected solid waste, no air or land emissions of pollutants, hazardous waste, or waste requiring special handling and disposal, or negative social or significantly positive socioeconomic impacts are anticipated.

Construction of the intake would occur within the limits of the SFHR 100-year floodplain. This generally includes the area lying below elevation 1,737 feet msl. Washington County is a participant in Federal Emergency Management Agency's National Flood Insurance Program (NFIP). The project would be designed to meet the requirements of the NFIP and all local ordinances. For compliance with Executive Order 11988 (Floodplain Management), an underwater intake structure is considered a repetitive action that should result in minor floodplain impacts. In regard to the location of the intake, WCSA has evaluated alternatives but found no practicable alternative to the proposed floodplain location. Under Alternatives 2 and 3), anticipated impacts on local flooding and floodplain values would be insignificant.

The proposed maximum withdrawal rate under Alternatives 2 and 3 (12 MGD) from SFHR represents 24 percent of the 7Q10 (i.e., the lowest streamflow for seven consecutive days that would be expected to occur once in 10 years). Given the short distance downstream to the mouth of the MFHR, this withdrawal rate would only represent 14 percent of the combined MFHR and SFHR 7Q10 flows (Bohac and Koroa 2004). Under normal flow conditions, water quantity impacts would likely be minimal, and no reductions in the assimilative capacity or impacts on aquatic ecosystem functions would be expected. Since the likelihood of an emergency situation during low flow is small and any required maintenance at the plants could be scheduled during time periods of normal flow conditions, it is expected that approval of 12 MGD would have minimal impacts even during low flow conditions.

By letter dated November 20, 2003, the USFWS indicated that based on the project description and location, it appears that no impacts to federally listed or proposed species or designated critical habitat would occur at the SFHR intake. Passive intake screens and the designed flow-through velocity (pumped water) are not expected to create a risk of impingement mortality to fish and other aquatic life. However, because the intake design differs from the standard recommended, the Virginia Department of Game and Inland Fisheries would require WCSA to monitor the operational impacts of the proposed design on aquatic life in the SFHR. This commitment is specifically included in the Virginia Department of Environmental Quality's (VDEQ) Virginia Water Protection (VWP) Individual Permit Number 02-1007, C(6), issued on August 2, 2004. Subsequent to issuance of Permit No. 91-0420 for the original project, which expired on May 31, 1995, VMRC reaffirmed issuance of Permit No. 02-1007 on November 7, 2005, for the revised proposal. USACE authorized the project under a conditional Nationwide Permit No. 12, Utility Line Activities (Permit Number 02-10007-04), on March 30, 2004. WCSA would follow procedures included in the *Virginia Erosion and Sediment Control Handbook, 3rd Edition* (Virginia Department of Conservation and Recreation 1992) throughout intake project construction. These permits contain conditions that require rigorous implementation of sound engineering and construction best management practices (BMPs) and other measures to minimize impacts on water quality and aquatic life in SFHR. Silt fence and

earthen berms would be used in disturbed areas above the water level to prevent soil from entering the river. A temporary cofferdam would be constructed to allow construction of the intake structure. Geotextiles and riprap would be placed along exposed edges of the cofferdam to prevent erosion from streamflow. Therefore, impacts on water quality and aquatic life, even from needed intake back flushing, are expected to be minor during construction and operation.

Cultural Resources - Cultural resources surveys of the project area identified an archaeological site 44Wg560, which TVA and the Virginia State Historic Preservation Officer (SHPO) is eligible for inclusion in the National Register of Historic Places (NRHP), and a historic railroad trestle which had been previously determined eligible for the NRHP. TVA, in consultation with the Virginia Department of Historic Resources, have further determined that construction and operation of the intake as proposed in Alternative 2 would have an adverse effect on these properties.

Pursuant to 36 Code of Federal Regulations Part 800, TVA, the VA SHPO, and WCSA have executed an MOA to address the potential impacts on the cultural resources. The MOA (Attachment 1), signed on November 15, 2006, addresses the federal permitting agency's responsibilities under Section 106 of the National Historic Preservation Act. The project would also have a minor visual effect on the nearby Norfolk & Western Railroad bridge, locally known as Creeper Trestle and located about 500 feet downstream of the proposed intake site. The Virginia Creeper Trail, of which the trestle is a part, has been previously determined eligible for the NRHP by consensus between the VA SHPO and VDOT. In response to a TVA consultation letter of April 28, 2006, the VA SHPO concurred in a letter dated May 2, 2006, with TVA's determination that, with mitigation, the project would have no adverse effect to historic properties (Attachment 2). This mitigation, addressed in the MOA, includes the use of appropriately textured and colored construction materials in the construction of the intake structure, prevention of disturbance to the existing vegetation between the project and the Virginia Creeper Trail, and the addition of vegetation of appropriate native species to obscure the new construction from the trail further (see Attachment 1).

As shown on conceptual plans submitted on September 12, 2005, the access bridge to the intake structure would potentially affect archaeological site 44Wg560. However, to possibly reduce its costs, WCSA is considering final redesign plans for the bridge to avoid the site completely (see VIII. C. Administrative Conditions in the MOA, Attachment 1). If archaeological site 44Wg560 is unavoidable, mitigation for loss of this site would include development of a data recovery plan, as described in the attached MOA. This plan, developed in consultation with TVA, USACE, VA SHPO, EBCI, and VCI, stipulates how the recovery of archaeological data from site 44Wg560 would be carried out. WCSA would be responsible for providing all funds necessary for the implementation of the requirements of this MOA. Upon the WCSA decision to proceed with the project, TVA, together with other signatories to the MOA, would ensure that the stipulations of the MOA are implemented such that the effects of the intake construction on archaeological resources are minimized.

WCSA participated in the consultation and has been invited to be a signatory to this MOA. Other participants in the consultation include the EBCI, the VCI, and the Advisory Council on Historic Preservation. The EBCI and VCI have been invited to concur in this MOA, which provides for specific plan components, plan review, plan management, treatment of any human remains, curation of archaeological materials, handling of other unexpected discoveries, limits of construction impacts, scheduling, and administration.

Potential for Cumulative Effects

The United States Geological Survey, in cooperation with TVA, has recently published an analysis of water use in the Tennessee River watershed (Hutson et al. 2004). The report analyzes in-stream and off-stream water withdrawals and returns for 2000 and makes projections for 2030. The Tennessee River watershed ranks first in the nation in average daily water withdrawals per square mile; however, the watershed ranks lowest in the nation for consumptive loss (water that isn't returned to the river system).

Washington County presently supplies water from two groundwater sources located south of SFHR and from one surface water intake on the MFHR. Peak-day demand from this existing, upstream surface water intake in 2000 is estimated to be about 14 percent of the 7Q10 and could rise to 15 percent by 2030. As described above, the requested withdrawal rate of 12 MGD from SFHR would represent about 14 percent of the combined MFHR and SFHR combined 7Q10 flows. During normal and low flow conditions, water quantity impacts are expected to be minimal. Presently, water withdrawals in Smyth, Washington, and Scott Counties, Virginia, total some 11.334 MGD from both surface water (North, Middle, and South Forks of the Holston River) and groundwater (including springs) sources. Areas served include Big Moccasin Creek, Gate City, Adwolf, Chilhowie, Marion, and Saltville. Growth in this largely rural area is expected to be minimal, and the 2030 projected demand is only 12.232 MGD or a 0.898 MGD increase (Bohac and Koroa 2004). Bristol, Virginia, withdraws raw water, approximately 4.12 MGD, from South Holston Reservoir (SFHR) some 3.5 miles (approximately SFHRM 69.1) downstream of the proposed WCSA intake. No new withdrawal projects in these counties are currently foreseen. The vast majority of this water, after treatment, would be returned to the Tennessee River. Because aquatic ecological effects of this new SFHR intake would be monitored and TVA and VDEQ are restricting the withdrawal, requiring reporting, prohibiting transferring water outside the river basin, requiring permit renewal in 15 years, and reevaluating this renewal in light of other requests received and likely conditionally approved in the future, TVA expects cumulative impacts of these withdrawals in the headwater streams to be minor.

After obtaining necessary state and federal permits, VDOT is presently working to widen the first 1-mile stretch of U.S. Highway 58 from Abingdon eastward to Damascus upstream of the proposed intake. However, because of lack of funding, VDOT does not presently foresee completion of the remainder of the project. TVA, USACE, VDEQ, and VMRC have reviewed and would continue to review projects in this area and, as appropriate, require mitigation to avoid or minimize their individual and cumulative environmental impacts.

Permit Conditions and Mitigation

TVA, in consultation with the VA SHPO, EBCI, and VCI, has prepared a final MOA, signed on November 15, 2006, that addresses responsibilities for implementing mitigation measures to compensate for unavoidable adverse impacts from intake structure construction and satisfies TVA's responsibilities under Section 106 of the National Historic Preservation Act (Attachment 1). This MOA stipulates how the recovery of archaeological data from site 44Wg560 would be carried out. WCSA would comply with all stipulations in the MOA, including the provisions to minimize the visual effect on the Virginia Creeper Trail (see Attachment 2). Further, the Section 26a permit would require WCSA to implement the requirements of the MOA.

WCSA would design the project to meet the requirements of the NFIP and all local floodplain ordinances. As stated in the VWP permit, WCSA would monitor the operational

impacts of the intake on aquatic life in the SFHR. WCSA would implement BMPs and other measures included in its VMRC and USACE permits as well as comply with standard and general conditions of its TVA Section 26a permit. WCSA would follow procedures included in the *Virginia Erosion and Sediment Control Handbook, 3rd Edition* (Virginia Department of Conservation and Recreation 1992) throughout intake project construction to minimize impacts on water quality and aquatic life in SFHR.

The TVA Section 26a approval would require WCSA to adhere to special conditions and requirements including a maximum peak daily withdrawal rate (12 MGD), annual usage reporting, and a prohibition against sale or transfer of water from this source outside the existing utility service territory. The Section 26a permit would expire at the end of 15 years from the date of its issuance.

Public Review

On August 2, 2002, a public notice (No. 02-1007-04) was issued by USACE on its behalf as well as on behalf of TVA and regulatory agencies of the Commonwealth of Virginia. This notice described the original WCSA proposal, which, at the time, called for intakes at both the MFHR and SFHR sites. Comments from one federal and two state agencies were received in response to this notice. USACE received objections from VDEQ and the Virginia Department of Game and Inland Fisheries, and the USFWS requested formal consultation on the project due to the presence of endangered and threatened species in the MFHR. However, the proposed actions at the MFHR site have been dropped from the WCSA proposal, and sufficient project redesign and mitigation have been incorporated into the SFHR project to resolve all objections.

A VDEQ public notice appeared in the *Bristol Herald Courier* on Thursday, June 24, 2004, announcing WCSA's intent to seek and obtain a VWP Individual Permit for the proposed intake. The notice announced the State Water Control Board's tentative proposal to issue the permit for 12 MGD from SFHR for municipal water supply purposes subject to certain conditions that limit the volume of water that can be withdrawn and require conservation during drought emergencies. No comments from the public at large were received. Conditional VWP Individual Permit Number 02-1007 was subsequently issued on August 2, 2004, and comments from other agencies were considered in this decision.

WCSA submitted another revised application in September 2005 reflecting final design plans and recommendations of all permitting authorities. Conditional permits from VDEQ and VMRC have been issued consistent with the revised project proposal.

TVA Preparers

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Danny E. Olinger, Archaeologist, Cultural Resources, Environmental Stewardship & Policy

Anne W. Patrick, Land Use Representative, Environmental Stewardship & Policy

T. Margueritte Wilson, Environmental Scientist, Environmental Stewardship & Policy

Agencies and Others Consulted

Advisory Council on Historic Preservation

U.S. Army Corps of Engineer, Norfolk District

U.S. Fish and Wildlife Service

Virginia Department of Conservation and Recreation

Virginia Department of Environmental Quality

Virginia Department of Game and Inland Fisheries

Virginia Department of Historic Resources, State Historic Preservation Office

Virginia Marine Resources Commission

Washington County Service Authority

References

- Bohac, C. E., and C. M. Koroa. 2004. *Tennessee Valley Water Supply Inventory and Needs Analysis*. Knoxville: Tennessee Valley Authority, River Operations, Navigation and Hydraulic Engineering (November 2004).
- Hutson, S. S., C. M. Koroa, and C. M. Murphree. 2004. Estimated Use of Water in the Tennessee River Watershed in 2000 and Projections of Water Use to 2030. U. S. Geological Survey Water-resources Investigations Report 03-4302, prepared in cooperation with Tennessee Valley Authority, Nashville, TN
- Tennessee Valley Authority. 1997. *Final Environmental Assessment – Removal of Battery Casings From Appalachian Smelting and Refining Company Site, South Holston Reservoir, Tennessee*. Norris: TVA (September 1997).
- Virginia Department of Conservation and Recreation. 1992. *Virginia Erosion and Sediment Control Handbook* (3rd Edition), Richmond, VA.

Attachments

1. Memorandum of Agreement Among Tennessee Valley Authority, U.S. Army Corps of Engineers, and the Virginia State Historic Preservation Officer, in Consultation With Washington County Service Authority, for Construction of a Water Intake at South Fork Holston River Mile 72.5R, Washington County, Virginia, Signed on November 15, 2006
2. Commonwealth of Virginia, Department of Historic Resources, Letter of May 2, 2006, From Joanna Wilson to J. Bennett Graham, Response to TVA Consultation Letter Dated April 28, 2006, Raw Water Intake – South Fork Holston River – Department of Historic Resources File No. 2004-0524

Attachment 1

**Memorandum of Agreement Among Tennessee Valley Authority,
U.S. Army Corps of Engineers, and the Virginia State Historic Preservation Officer,
in Consultation With Washington County Service Authority,
for Construction of a Water Intake at South Fork Holston River Mile 72.5R,
Washington County, Virginia, Signed on November 15, 2006**

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**MEMORANDUM OF AGREEMENT
AMONG THE TENNESSEE VALLEY AUTHORITY,
THE U.S. ARMY CORPS OF ENGINEERS,
AND THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER,
REGARDING THE CONSTRUCTION OF THE SOUTH FORK HOLSTON RIVER
RAW WATER INTAKE FACILITY**

WHEREAS, the Tennessee Valley Authority (TVA), pursuant to Section 26a of the TVA Act, proposes to issue a permit to the Washington County Service Authority (WCSA) for the construction of the South Fork Holston River raw water intake facility (the Project); and

WHEREAS, the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the Clean Water Act, proposes to issue a permit to the WCSA for the Project; and

WHEREAS, TVA has been designated the lead Federal agency for the Project pursuant to 36 CFR Part 800.2(a)(2); and

WHEREAS, TVA has established the Project's area of potential effect (APE), as defined at 36 CFR Part 800.16(d), to be the excavation area for the intake pipe, the pumping station, and any other ground disturbance associated with the intake structure; and

WHEREAS, TVA has determined that the Project will have an adverse effect on archaeological site 44Wg560 as described in the report "Phase I Cultural Resources Survey for a Raw Water Intake Facility in Washington County, Virginia", prepared by Big Blue Archaeological Research, Inc., and dated August 2004, and

WHEREAS, TVA and the Virginia State Historic Preservation Officer (SHPO) have agreed that site 44Wg560 meets the criteria for inclusion in the National Register of Historic Places (NRHP); and

WHEREAS, TVA and the SHPO agree that the Project will have an effect on the Virginia Creeper Trail, a property determined eligible for the NRHP, and

WHEREAS, WCSA has determined that alternative sites for the Project are not economically or logistically feasible; and

WHEREAS, WCSA will be responsible for all costs associated with the implementation of this agreement; and

WHEREAS, pursuant to 36 CFR Part 800.6(c)(2) WCSA participated in the consultation and has been invited to be a signatory in this Memorandum of Agreement (MOA); and

WHEREAS, pursuant to 36 CFR Part 800.6(c)(3) the Eastern Band of Cherokee Indians (EBCI) participated in the consultation and has been invited to concur in this MOA; and

WHEREAS, pursuant to 36 CFR Part 800.6(c)(3) the Virginia Council on Indians (VCI) participated in the consultation and has been invited to concur in this MOA; and

WHEREAS, the Advisory Council on Historic Preservation (Council) participated in the consultation;

NOW, THEREFORE, TVA, USACE, and the SHPO agree that upon WCSA's decision to proceed with the Project, TVA shall ensure that the following stipulations are implemented in order to take into account the effects of the Project on site 44Wg560 and the Virginia Creeper Trail, and that these stipulations shall govern the Project and all of its parts until this MOA expires or is terminated.

STIPULATIONS

TVA shall ensure that the following stipulations are implemented:

I. DEVELOPMENT OF DATA RECOVERY PLAN

WCSA shall develop a data recovery plan (the Plan) in consultation with TVA, USACE, the SHPO, EBCI, and VCI for the recovery of archeological data from site 44Wg560. WCSA shall ensure that the Plan is consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37) and shall consider and address the Council's publication, Treatment of Archaeological Properties (Advisory Council on Historic Preservation, [draft] 1980). All data recovery will be carried out in a manner consistent with the Plan. WCSA shall ensure that the Plan describes and justifies the studies to be carried out, including but not limited to:

- A. The property, properties, or portions of properties where data recovery is to be carried out;
- B. Any property, properties, or portions of properties that will be destroyed without data recovery;
- C. The results of previous research relevant to the Project;
- D. Research problems or questions to be addressed with an explanation of their relevance and importance;
- E. The field and laboratory analysis methods to be used, along with an explanation of how they apply to the property in question and how they will address the above research needs;
- F. Explicit provisions for disseminating the research findings to professional peers in a timely manner;
- G. Arrangements for presenting findings to the public and other interested parties that have vested interests in the results;
- H. The curation of recovered materials and records resulting from the data recovery in accordance with 36 CFR Part 79, including temporary and permanent repositories;
- I. Procedures for evaluating and treating discoveries of unexpected remains or newly identified archaeological resources during the course of the Project, including required consultation with other parties; and
- J. A timeline for the field and laboratory analyses, completing a technical report on the investigation, disseminating the findings to professional peers, and presenting interpretive documents or other interpretive media to the public.

II. DATA RECOVERY PLAN REVIEW AND IMPLEMENTATION

WCSA shall submit the Plan to the TVA and SHPO for review and approval. TVA shall also provide a copy of the Plan to each concurring party for review and comment. TVA shall ensure that all comments submitted within thirty (30) days of receipt of the plan are addressed in the final document.

A. Unless any signatory objects within thirty (30) days of receipt of the Plan, TVA shall ensure that the Plan is implemented by WCSA prior to and in coordination with those project activities that will result in ground-disturbance at archaeological site 44Wg560.

B. If any signatory objects to the Plan within thirty (30) days of receipt of the Plan, TVA shall consult with the objecting party and other consulting parties to resolve the objection and, having resolved the objection, shall implement the Plan subject to whatever modifications result from resolution of the objection.

C. If TVA determines that the objection cannot be resolved; TVA shall comply with Stipulation IX.E.

III. MANAGEMENT OF DATA RECOVERY PLAN

Development and execution of the Plan shall ensure WCSA's compliance with the following:

A. The Plan is developed and shall be implemented by or under the direct supervision of a person, or persons, meeting at a minimum the Secretary of the Interior's Historic Preservation Professional Qualifications Standards for prehistoric archaeologist.

B. Adequate time and money to carry out all aspects of the Plan are provided, and that all parties consulted in the development of the Plan are kept informed of the status of its implementation;

C. All archeological studies, resulting from this Memorandum, including data recovery plan(s), shall be consistent with the *Secretary of the Interior's Standards and Guidelines for Archeological Documentation (48 FR 4434-37)*, the Director's Order 28, Technical Guidelines, and the SHPO's *Guidelines for Conducting Cultural Resource Survey in Virginia: Additional Guidance for the Implementation of the Federal Standards Entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44742, September 29, 1983) 1999, rev. 2000*, and shall take into account the Council's publications, *Consulting About Archeology Under Section 106 (1990)* and *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites (1999)*.

D. Draft final archaeological reports resulting from the data recovery will be submitted to TVA, the SHPO and other consulting parties for review and comment, and final reports are provided to TVA, the SHPO and other consulting parties. Two copies of both the final and draft reports shall be provided to the SHPO in accordance with the SHPO's guidelines referenced in stipulation III.C;

E. TVA, the SHPO and other consulting parties shall be afforded thirty days (30) to review and comment on any archaeological reports submitted as compliance with this agreement. TVA shall ensure that all comments submitted within thirty (30) days of receipt of the draft document are considered in preparing the final document;

F. All technical reports prepared pursuant to this agreement will be consistent with the federal standards entitled *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742, September 29, 1983) and the *Guidelines for Preparing Identification and Evaluation Reports for Submission Pursuant to Sections 106 and 110, National Historic Preservation Act*, as well as SHPO's *Guidelines for Conducting Cultural Resource Survey in Virginia* (rev. 2001);

G. Provision for special oversight, including professional peer review in the event that unusual or complex issues arise during the process of development and/or execution of the Plan;

H. Consultation with TVA, the SHPO and other consulting parties to ensure there are no unresolved issues concerning the recovery of significant information with any Indian tribe that may attach religious and cultural significance to the affected archaeological property.

IV. TREATMENT OF HUMAN REMAINS

Should human remains be encountered during the implementation of the Plan, all ground disturbing activities in the vicinity of the human remains will be ceased immediately. TVA Cultural Resources staff will be immediately notified. WCSA shall ensure that human skeletal remains and associated funerary objects encountered during the course of actions taken as a result of this agreement shall be treated in accordance with the Regulations Governing Permits for the Archaeological Removal of Human Remains (Virginia Register 390-01-02) promulgated under the *Code of Virginia* (10.1-2300, et seq., Virginia Antiquities Act). The applicant will obtain a permit from the SHPO for the removal of human remains in accordance with the regulations stated above. The preferred treatment of Native American human remains and associated funerary objects is preservation in place. If preservation in place is not feasible, in addition to adherence to Virginia state law cited above, such remains will be treated in accordance with the Eastern Band of Cherokee Indians' Treatment Guidelines for Human Remains and Funerary Objects (Appendix A to this Agreement).

V. CURATION

All archaeological materials and appropriate field and research notes, maps, drawing and photographic records collected as part of this project (with the exception of human skeletal remains) will be cared for in a repository approved by the SHPO and in accordance with the requirements in 36 CFR 79, *Curation of Federally Owned and Administered Archeological Collections*. All such items will be made available to educational institutions and individual scholars for appropriate exhibit and/or research under the operating policies of the selected repository.

VI. UNEXPECTED DISCOVERIES

A. In the event that previously unidentified archaeological resources are discovered during ground disturbing activities within the area of potential effect, WCSA will immediately halt all construction work involving subsurface disturbance in the area of the resource and in the surrounding area where further subsurface resources can reasonably be expected to occur and immediately notify TVA and the SHPO of the discovery.

B. TVA and the SHPO, or an archaeologist approved by them, will immediately inspect the work site and determine the area and nature of the affected archaeological resource. Construction work may then continue in the area outside the archaeological resource as defined by TVA and the SHPO, or their designated representative.

C. Within five (5) working days of the original notification of discovery, TVA, in consultation with the SHPO, will determine the National Register eligibility of the resource.

D. If the resource is determined eligible for the National Register, WCSA shall prepare a plan for its avoidance, protection, or recovery of information. TVA and SHPO shall approve such plan, prior to implementation.

E. Work in the affected area shall not proceed until either:

1. The development and implementation of appropriate data recovery or other recommended mitigation procedures, or
2. The determination is made that the located resources are not eligible for inclusion on the National Register.

F. Any disputes over the evaluation or treatment of previously unidentified resources will be resolved as provided in the section of this Memorandum entitled Administrative Conditions (IX.E).

VII. LIMITING CONSTRUCTION IMPACTS

WCSA shall ensure that construction of the Project is carried out in accordance with the concept design of the proposed raw water intake facility dated September 12, 2005, and attached hereto as Appendix A, and that construction workers are clearly informed that all construction is to be limited to the area delineated in that drawing. Additionally, WCSA shall ensure that the following measures are implemented to protect portions of site 44WG560 that may be indirectly affected by construction:

1. Filter fabric and a minimum of six (6) inches of rock fill should be applied to the ground surface to minimize disturbance caused by construction machinery;
2. Filter fabric should cover ground surface to be used for temporary storage of soil; and
3. Any trees to be removed from the site area should be cut at ground surface with root systems left undisturbed.

VIII. REDUCTION OF VISUAL EFFECTS ON THE VIRGINIA CREEPER TRAIL

WCSA shall ensure that the project is carried out according to the following conditions so that visual effects on the Virginia Creeper Trail are minimized:

1. Appropriately textured and colored construction materials, subject to approval by TVA and the SHPO, will be employed to blend the project into the pastoral setting;
2. To the extent feasible, existing vegetation between the project and the Virginia Creeper Trail will not be disturbed; and
3. To the extent feasible, additional vegetation of appropriate native species will be planted to further obscure the new construction from the Trail.

IX. ADMINISTRATIVE CONDITIONS

A. If Stipulations I-VII have not been implemented within four (4) years, this agreement shall be considered null and void, unless the signatories have agreed in writing as provided in Paragraph IX.B below to an extension for carrying out its terms. If no agreement is reached on an extension at the end of this four-year period, TVA, USACE, the SHPO, and other consulting parties will resume consultation pursuant to 36 CFR Part 800.

B. If Stipulations I-VII have not been implemented within two (2) years from the date of this agreement's execution, the signatories shall review the agreement to determine whether the agreement should be extended. If an extension is deemed necessary, TVA, USACE, the SHPO, and other consulting parties will consult in accordance with 36 CFR Part 800.6(c) to make appropriate revisions to the agreement.

C. If the WCSA elects to implement a final design other than the concept design dated September 12, 2005 (Appendix B to this Agreement) and if the final design, as approved by TVA, and with the concurrence of the SHPO, avoids all ground disturbances within the defined limits of Site 44Wg560, the WCSA will be exempt from the requirements of Stipulations I-V.

D. The signatories to this agreement may agree to amend the terms of the agreement. Such amendment shall be effective upon the signatures of all signatory parties to this agreement, which shall be appended to the agreement as an attachment.

E. Should any signatory object regarding any action carried out or proposed with respect to the undertaking covered by this agreement or to implementation of this agreement, TVA shall consult with the objecting party to resolve the objection. If TVA determines that the objection cannot be resolved, TVA shall request the further comments of the Council. Within thirty (30) days after receipt of all pertinent documentation, the Council shall exercise one of the following options:

1. Advise TVA that the Council concurs with TVA's proposed response to the objection, whereupon TVA will respond to the objection accordingly; or
2. Provide TVA with recommendations, which TVA shall take into account in reaching a final decision regarding its response to the objection; or

F. Should the Council not exercise one of the above options within thirty (30) days after receipt of all pertinent documentation, TVA may assume the Council's concurrence in its proposed response to the objection. Any Council comment provided in response to such a request will be taken into account by TVA in accordance with 36 CFR Part 800 with reference only to the subject of the dispute; TVA's responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

G. If any signatory to this agreement determines that the terms of the agreement cannot be carried out, the signatories shall consult to seek an amendment to the agreement. If the agreement is not amended, any signatory may terminate the agreement. TVA shall either execute a new agreement with the signatories pursuant to 36 CFR Part 800.6(c)(1) or request the comments of the Council pursuant to 36 CFR Part 800.7(a).

H. At any time during implementation of the measures stipulated in this agreement, should an objection pertaining to this agreement be raised by a member of the public, the TVA shall notify the signatories to this agreement and take the objection into account, consulting with the objector and, should the objector so request, with any of the signatories to this agreement to resolve the objection.

EXECUTION OF MEMORANDUM OF AGREEMENT

Execution of this Memorandum of Agreement by TVA, the USACE, and the SHPO and its submission to the Council in accordance with 36 CFR 800.6(b)(1)(iv) shall, pursuant to 36 CFR 800.6(c), be considered an agreement with the Council for the purposes of Section 110(1) of the NHPA. Execution and submission of this Memorandum, and implementation of its terms evidence that the TVA has, in accordance with Section 106 of the National Historic Preservation Act, taken into account the effects of the Project on Historic Properties and afforded the Council an opportunity to comment.

SIGNATORIES:

TENNESSEE VALLEY AUTHORITY

By: 
[Kathryn J. Jackson, Executive Vice President, RSO&E]

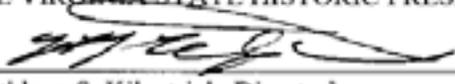
Date: 7.6.06

U.S. ARMY CORPS OF ENGINEERS

By: _____
[_____]

Date: _____

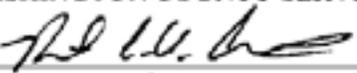
THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By: 
[Kathleen S. Kilpatrick, Director]

Date: 11/6/06

INVITED SIGNATORIES:

WASHINGTON COUNTY SERVICE AUTHORITY

By: 
[ROBERT C. W. CONNETT, INTERIM GENERAL MANAGER]

Date: 31/AUG/06

CONCURRENCE BY OTHERS:

THE EASTERN BAND OF CHEROKEE INDIANS

By: _____
[_____]

Date: _____

THE VIRGINIA COUNCIL ON INDIANS

By: Deanna Beacham
[DEANNA BEACHAM]
PROGRAM SPECIALIST

Date: 11/15/2006

Appendix A

EBCI Treatment Guidelines for Human Remains and Funerary Objects (Survey, Excavation, Laboratory/Analysis, and Curation Guidelines)

It is the wish of the EBCI that whenever possible, human interments be left in situ, unstudied, and protected from current and future disturbance. However, when these parameters cannot be met, the following guidance shall apply:

Archeological Surveys: The EBCI requests that in the event human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered, no photographs of such items be taken. Detailed drawings are permissible, however.

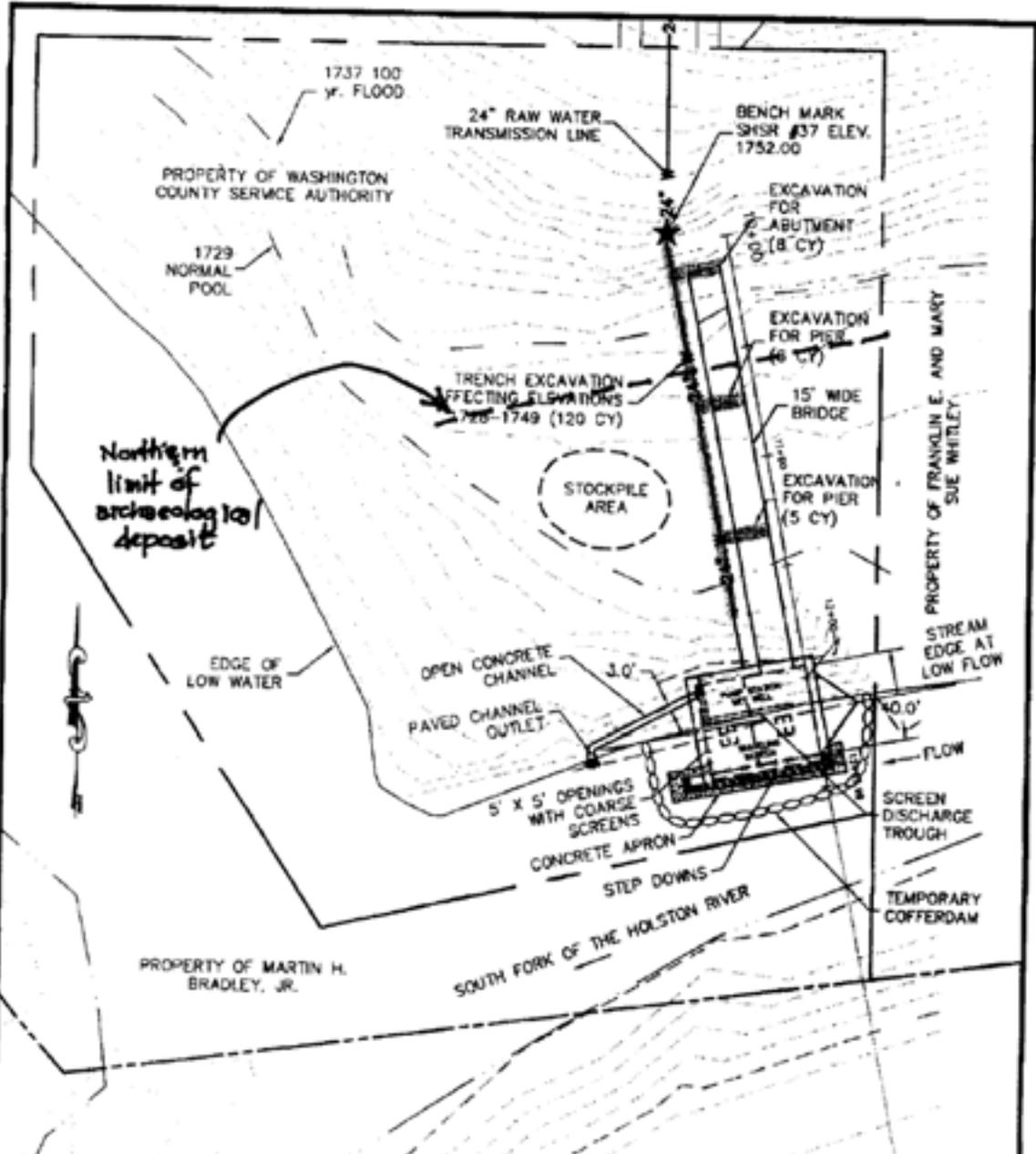
Excavations: The EBCI requests that in the event human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered, no photographs of such items be taken. Detailed drawings are permissible, however. Also, if after consultation with the SHPO and culturally affiliated, federally recognized tribes, the lead agency determines that the excavation of these items is required, the EBCI requests that only the lead archaeologist and a physical anthropologist participate in the removal of these items. The EBCI also requests that, in the case of full excavation of human remains, the entire burial matrix be removed and curated for future reburial. Lastly, EBCI requests to be sent the proposals and research designs that will be provided to the SHPO and State Archaeologist for review and approval prior to the initiation of any excavation activities.

Laboratory Treatment/Analysis: The EBCI requests that any human remains, funerary objects, sacred objects, and/or objects of cultural patrimony not be unnecessarily washed or cleaned, and that only dry brushing be consistently used. Again, we request that no photographs be taken of such objects for documentation or curation purposes, however detailed drawings are acceptable. Furthermore, in terms of human remains, we require that no destructive analyses be permitted, and we would like to have discussions and agreements about the kind of analyses, if any, that will be permitted.

Curation: The EBCI requests that in all cases where it is remotely feasible, that human remains, associated funerary objects, and the burial matrix be stored together. Furthermore, we ask that these type of objects, as well as sacred objects and objects of cultural patrimony, be removed from public viewing or public handling and that researchers not automatically be granted access to such items. Research requests should be submitted to the EBCI Cultural Resources office in the event someone wishes to study such items.

Avoidance/Preservation in Place/Excavation/Reburial: Remember, our preference is always avoidance/preservation in place. Unless there are very good reasons as to why this is not possible, we will not immediately enter into discussions of excavation, removal, study, reburial, etc. That being said, if remains must be moved, it is always our preference that they be out of the ground for only as long as it takes to move them to their new resting place, which should be as close to the original resting place as possible (within line of sight). Sometimes, we do allow minimal study of the remains, especially if it can be done with the remains in situ. If longer study is needed, we prefer a field lab to sending them off some distance to be studied in a lab. The bottom line is that the less time they are exposed to the air, the better it is for the people involved and the Tribe. If reburial is the only option, the most efficient/time sensitive reburial process is preferred. Also, capping of the burials is not typically problematic, especially if there is ample fill dirt between the individual and the foreign capping material.

Appendix B



**FILL / EXCAVATION COFFERDAM PLAN VIEW
 PROPOSED INTAKE STRUCTURE
 WASHINGTON COUNTY, VIRGINIA**

SCALE: 1"=60'
 PLAN NO. B02314-04

Draper Aden Associates
 Engineering • Surveying • Environmental Services

2206 South Main Street
 Blacksburg, VA 24030
 540-552-0444 Fax: 540-552-0291

Richmond, VA
 Charlottesville, VA
 Hampton Roads, VA

DESIGNED DCM
 DRAWN DLD, LYC
 CHECKED JSL
 DATE 09/12/05

FIGURE
 2

P:\000-000-0000\14-002314-04-CAD\04-01.dwg 3/14/05 11:00:33 AM

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Attachment 2

**Commonwealth of Virginia, Department of Historic Resources,
Letter of May 2, 2006, From Joanna Wilson to J. Bennett Graham
Response to TVA Consultation Letter Dated April 28, 2006,
Raw Water Intake – South Fork Holston River –
Department of Historic Resources File No. 2004-0524**

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COMMONWEALTH of VIRGINIA

L. Proton Bryant, Jr.
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

May 2, 2006

Mr. J. Bennett Graham
Tennessee Valley Authority
400 W. Summit Hill Drive
Knoxville, TN 37902-1401

Re: Raw Water Intake – South Fork Holston River
DHR File # 2004-0524

Dear Mr. Graham:

We have received additional information pursuant to our review of the above referenced project. Our staff has completed the review of the materials submitted. Based upon the information provided we concur with your recommendation of *no adverse effect* to historic properties. To assist in avoiding visual effects, we concur with the proposal to use appropriate materials and colors, and also ask that additional vegetative screening be planted to further obscure the new construction.

If you have any questions about the Section 106 review process or our comments, please call me at (804) 367-2323, Ext. 140.

Sincerely,

Joanna Wilson, Archaeologist
Office of Review and Compliance

Administrative Services
10 Courthouse Avenue
Petersburg, VA 23103
Tel: (804) 863-1624
Fax: (804) 862-6196

Capital Region Office
2801 Kensington Ave.
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Tidewater Region Office
1441 S. Old Courthouse Way, 2nd Floor
Newport News, VA 23608
Tel: (757) 899-2602
Fax: (757) 899-2608

Roanoke Region Office
1030 Pennate Ave., NE
Roanoke, VA 24013
Tel: (540) 857-7985
Fax: (540) 857-7988

Winchester Region Office
107 N. Kent Street, Suite 203
Winchester, VA 23391
Tel: (540) 722-2477
Fax: (540) 722-7755