

## **REEVALUATION OF FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

### **SEVIERVILLE WATER SYSTEMS (SWS) RAW WATER INTAKE AND WATER TREATMENT PLANT – FRENCH BROAD RIVER MILE 27.5L, SEVIER COUNTY, TENNESSEE**

#### **Background**

On February 4, 2005, TVA completed a FONSI for Section 26a approval of the proposed Sevierville Water Systems (SWS) intake and water treatment plant at French Broad River Mile (FBRM) 27.5. The need for a geotechnical investigation to determine the presence of rock and the need for blasting to excavate and install the 1600 feet of intake pipe is addressed in a jointly-prepared January 31, 2005 U.S. Army Corps of Engineers (USACE) environmental assessment (EA) and, in a general way, in the final TVA FONSI. On February 7, Jordan, Jones and Goulding (JJG), on behalf of SWS, requested that it be allowed to conduct a geotechnical investigation and relocate native mussels in the river in the proposed project impact area prior to March 31 and within a time period wherein work was prohibited. On April 6, Aquarius Marine, Inc., on behalf of SWS (subcontractor to the primary contractor, W. Rogers Company), presented a proposal to TVA, in connection with the approved intake installation, to rent an upstream piece of private land for use as a staging and launch area. Separate evaluations of these actions were undertaken to assess the potential environmental impacts. Contingent upon implementation of mitigative measures included in the original project FONSI, these additional connected actions were subsequently determined to be individually and cumulatively insignificant.

#### **Purpose and Need**

Because of varying Douglas Reservoir discharge volumes, resultant fluctuating water levels, and the need to keep work barges (construction, equipment, and temporary spoil storage) afloat on the French Broad River (Douglas Dam tailwater), Sevierville Water Systems (SWS) has been unable to make substantial progress with installation of the approved 1,600 feet of 36-inch diameter ductile iron pipe and intake this summer. After working with limited success throughout the summer to install the intake and pipeline as originally designed, on August 18, 2005, W. Rogers Company requested that TVA approve construction of a 1200-foot temporary rock construction work pad in the French Broad River to facilitate this construction (see request attached to this FONSI). Constructing the top of the pad to elevation 863-foot mean sea level (msl) would allow some flows to pass over the top during generation from Douglas Dam and unregulated flows from the Little Pigeon River to flow under the proposed bridge just downstream of the mouth of the Little Pigeon River. Work would cease during high river flows and all equipment, tools and construction material would be removed from the pad to the treatment plant site on McCroskey Island.

In addition, Aquarius Marine, Inc. (subcontractor to the primary contractor, W. Rogers Company), has been asked by a landowner (Mr. Clark) to place material, either shot rock from the riverbed trench or rock from the temporary construction pad, along a portion of the opposite shoreline (right descending bank) for stabilization purposes.

TVA expects to receive an application for riprap refurbishment at this location in the near future. Effects of this work, as well as additional shoreline stabilization along McCrosky Island in the vicinity of the water treatment requested by SWS are included in this evaluation.

Therefore, TVA has three additional actions to consider in conjunction with the SWS project: 1) approve a construction work pad (see attached W. Rogers Company request), 2) approve shoreline stabilization along city property at McCroskey Island, and 3) upon receipt of an application, approve refurbishment of the riprap along Mr. Clark's shoreline. The proposed construction method would have different impacts than were assessed in the original January 31, 2005 environmental assessment (EA) and February 4, 2005 FONSI. TVA has reevaluated project impacts in light of this substantial change in the project.

### **Proposed Modification on Construction**

TVA has been asked to approve a modification of construction methods for a water intake previously approved at FBRM 27.5, about 5 miles below and in the tailwater of Douglas Dam and Reservoir. A description of the site and general environs can be found in the January 31, 2005 USACE EA and FONSI and February 4, 2005 TVA FONSI.

Originally, temporary rock construction pads were to be built in 54-foot long segments and removed once work along that portion of the pipeline was completed. As now proposed, the temporary pad would extend from the McCroskey Island shore, across a 128-foot bridge, and angle upstream just above the mouth of the Little Pigeon River along the centerline of the previously approved pipeline route. This pad would follow the pipe alignment and stop approximately 444 feet short of the intake screens, i.e., end of pipe. The pad would be 20 to 25 feet wide at the top, 30 to 35 feet wide at the base, and its top would be at elevation 863-foot msl. Surge stone would be placed in the river using a rubber tired front end loader. If the pad is allowed, W. Rogers Company would be able to lengthen its work days and conduct all pipeline installation work by digging, blasting, and excavating through the pad and returning their equipment back to land using the same pad at the end of the day. Excess spoil material excavated from the riverbed would be placed on floating barges or temporarily on the construction pad itself (i.e., no sidecasting into the river). Once completed, the construction pad would be removed from the river with a front end loader or track hoe and its surge rock used for fill material needed on the water treatment plant site, for shoreline stabilization and armoring proposed along the French Broad River at McCroskey Island or it would be placed elsewhere at a nearby upland site on McCroskey Island above elevation 878.7-foot msl (100-year flood elevation at FBRM 27.5). Because of unexpected delays, intake and pipeline construction would likely extend into the summer, 2006. Attached to this FONSI is W. Rogers Company's August 26, 2005 response to questions seeking clarification of its revised intake installation proposal.

The temporary bridge, beginning about 60 feet from the water treatment plant shoreline, would extend into the river about 128 feet to connect with the rock pad at the base of a gravel bar at about Station 2+00 (or 200 feet from shore). It would be constructed of timber mats on bridge beams and supported at two locations by 9-foot wide barges proposed to be sunk in the river. Approximately 22 feet of both ends of the bridge would be hinged to allow a sloping angle and appropriate movement as a vehicle and other equipment crosses, while a 41-foot section in the middle of the bridge

would have a fixed span (see bridge plans for location and more details attached to this FONSI). There would be 4 feet of clearance between the bottom of the bridge and projected low river flow elevation (862.4-foot msl). During high flows, boats would be able to pass along the right descending shore. The bridge and pad would be marked and lighted so they would not to become a hazard to recreational boating.

Aquarius Marine, Inc. estimates that it would refurbish about 500 feet of Mr. Clark's shoreline with rock. This shoreline was stabilized with riprap in the past, but needs additional rock to further curb erosion. SWS would armor additional shoreline upstream and/or downstream of the water treatment plant site to prevent erosion. Rock for this purpose would come from river bottom trench excavation (shot rock) or quarried rock removed from the construction work pad proposed to be placed in the river. The extent of the additional shoreline armoring would depend on the total volume of excess rock, the amount of spoil needed as fill material to raise the elevation of structures at the water treatment plant site, and amount of rock ultimately removed from the pipeline trench and the construction work pad.

### **Impacts Assessment**

As previously documented in the February 4, 2005 TVA FONSI, the federally endangered snail darter (*Percina tanasi*) is known to occur both upstream and downstream of the project site in the French Broad River. Snail darters are believed to travel through this reach of the river and probably up the Little Pigeon River during the spawning season. However, habitat in the immediate vicinity of the project is not suitable for snail darter spawning. The proposed shoreline stabilization (placing new rock and refurbishing existing riprap (rock) in the vicinity of the project) would have no effect on the snail darter. The proposed bridge and rock pad could be constructed in 4 to 6 weeks and could be in place prior to onset of the snail darter spawning season. Because trenching and intake installation work would occur from the pad with no sidecasting of spoil material, minimal additional sediment and resultant turbidity are expected. Neither construction of, work from, nor removal of the pad during the spawning season would affect snail darter movement or spawning activities. The bridge to the rock construction pad in the vicinity of the mouth of the Little Pigeon River would leave an available 41-foot wide channel for snail darter and other fish species to pass. Based on the above considerations and findings, TVA has determined that the project would not likely adversely affect snail darters or their habitat in the French Broad River. By letter dated, October 21, 2005, the U.S. Fish and Wildlife Service (USFWS) concurs with this "not likely to adversely effect" determination.

McCroskey Island, in the vicinity of this project, is known for its wealth of archaeological deposits including human burials. For the purpose of bank stabilization work on its land in the vicinity of the water treatment plant, SWS would avoid excavating or reshaping the riverbank, place rock underlain with filter fabric, and place rock from the river by barge. Because shoreline along Mr. Clark's property was previous armored, it would not be underlain with new filter fabric. This proposed bank stabilization methodology has no potential to affect archaeological resources.

Since the rock construction pad would be temporary, marked or lighted to enhance visibility, and not completely block the passage of recreational boat or inhibit upstream movement of spawning fish in the French Broad and Little Pigeon rivers, no new or additional impacts on recreation, navigation, or recreational fishing are expected. Work on the new intake facility will continue to be performed in accordance with all provisions and special conditions of the Section 401 Water Quality Certification issued by the

Tennessee Department of Environment and Conservation issued on December 14, 2004.

As indicated in the previous TVA FONSI, construction of the water treatment plant and intake structure would occur within the limits of the French Broad River 100-year floodplain. For compliance with Executive Order 11988, (Floodplain Management), W. Rogers Company evaluated several alternatives to the construction work pad and provided information to document that there is no practicable alternative to constructing it as proposed. In order to minimize adverse impacts, the bridge would be constructed just downstream of the mouth of the Little Pigeon River to prevent increases in upstream flood elevations. Also, the least amount of rock needed to successfully complete the project would be used and all material would be removed from the river after completion of the project except for a small amount of rock that would be used to stabilize (armor) some stretches of nearby river banks. SWS would ensure that the project would comply with local floodplain regulations. Any potential floodplain impacts would continue to be minimized by elevating and/or flood-proofing all components of the plant above the 100-year flood elevation.

### **Mitigation**

Based on W. Rogers Company's original proposal of August 18, 2005, the rock construction work pad was proposed to extend from the shore at the treatment plant to Station 12+00 (1200 feet) into the French Broad River. This included extending the pad across and just upstream of the mouth of the Little Pigeon River, an unregulated stream. During a meeting on September 8, 2005 with SWS, JJG, Aquarius Marine, Inc., USACE, and USFWS, W. Rogers Company agreed to further revise its plans to include the presently proposed bridge to address snail darter and other fish movement as well as stream flow concerns. This minimization measure was reflected in new plans submitted on September 13, 2005 and serves as a basis for this evaluation. Because of river bottom topography and typically greater water depths at the intake end of the pipe, W. Rogers Company has also indicated that, depending upon river flow volumes and resultant depths from Douglas Reservoir releases, it may not actually have to construct all 1200 feet of the pad. If a shorter distance proves sufficient, overall affects would be lessened.

For the purpose of bank stabilization work, SWS will avoid excavating or reshaping the riverbank, will underlay rock with filter fabric, and will place rock from the river by barge. SWS will provide evidence of adherence with this measure and continue abiding by all other environmental protection commitments included in its previous USACE authorization. This includes stipulations included in the Memorandum of Agreement for the recovery excavations from archaeological site 40Sv43 on McCroskey Island.

SWS will continue to coordinate its construction schedule with TVA's River Forecast Center.

**Conclusion and Findings**

Based on the above analysis of potential affects, as described, along with SWS observance of other mitigation measures included in the January 31, 2005 original USACE EA, we conclude that modifying project construction methods to allow the use of an in-stream rock construction work pad, including bridging of a 128-foot section just downstream of the Little Pigeon River mouth, will not have a significant impact on the quality of the environment. This includes the proposed additional shoreline stabilization on the right bank and near the water treatment plant with measures to protect potentially occurring archaeological resources. The previous FONSI and files memorandum are still valid. Accordingly, an environmental impact statement is not required.

*Harold M. Draper for*

*October 25, 2005*

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Jon M. Loney, Manager  
NEPA Administration  
Environmental Policy and Planning  
Tennessee Valley Authority

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Date Signed

# W. ROGERS COMPANY

August 18, 2005



Department of the Army  
Nashville District, Corps of Engineers  
3701 Bell Road  
Nashville, TN 37214

19 AUG

Attention: Mr. J. Ruben Hernandez

CORPORATE OFFICE

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Lexington, KY 40510  
P.O. Box 11640  
Lexington, KY 40576  
(859) 231-6290  
Fax (859) 231-6296

RE File No. 200400150  
McCroskey Island WTP  
Sevierville, TN  
WRC Job# 333

Dear Mr Hernandez

Attached find drawing prepared by FMSM Engineers showing the approved pipeline route and subsurface features.

This letter is written requesting a variance to COE Permit# 200400150 as I discussed with you via phone yesterday.

It is requested that the 54' long temporary rip rap pad mentioned on Page 7 be extended to reach the bank at Intake structure. This would result in a 1200' long pad at Elevation 863. The pad would be slightly above low pool and be submerged when generating.

The pad would be 20' to 25' wide at top and 30' to 35' wide at bottom. All work to be done by drilling and digging through the rip rap.

Variance is requested as moving barges in such shallow water is impractical



Post-It® Fax Note	7671	Date	8/24/05	# of pages	2
To	STAC DAVIS	From	RUBEN HERNANDEZ		
Co./Dept.	TVA-NEPA	Co.	USACE		
Phone #	865/632-2915	Phone #	615/369-7519		
Fax #	865/632-6855	Fax #	615/369-7501		

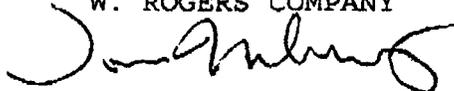
Mr. J. Ruben Hernandez  
Corps of Engineers  
August 18, 2005  
Page 2

I can be available to meet on-site at any time

Contact the writer should there be any questions

Sincerely,

W. ROGERS COMPANY



Tom McConathy  
Vice President

TM:th

Enclosure

cc: Benny Stump, WRC w/o enc

# W. ROGERS COMPANY

August 26, 2005



## CORPORATE OFFICE

649 Bizzell Drive  
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Department of the Army  
Nashville District, Corps of Engineers  
3701 Bell Road  
Nashville, TN 37214

Attention: Mr. J Ruben Hernandez

RE: File No. 200400150  
McCroskey Island WTP  
Sevierville, TN  
WRC Job# 333

Dear Mr Hernandez:

Listed below are answers to your questions dated 8-26-05

1. Material Type/Source: Work pad in river will be clean limestone surge stone from Sevierville quarry. Fines will be minimal.
2. Work Duration: Work duration will now extend into 2006. The pad will be required into Spring/Summer 2006. However, we will remove pad between December 15<sup>th</sup> and March 31<sup>st</sup> if necessary. If pad can be left in place it would help us.
3. Material Installation/Removal: Surge stone will be placed into the river with a rubber tired front end loader. The loader will run on material previously placed and dump along edge moving pad forward. Loader will remain above water on the work pad.  
  
Material will be removed with loader hauling material back to shore along work pad beginning at furthest point. Material will be scooped out of water with excavator.
4. Pad Length: My scheme requires the pad segment between shore and sandbar be filled. The whole scheme is based upon reaching land. Please approve. Keep in mind water flows through the surge stone and the river can go around McCroskey Island the other side during low flow. High flow water will go over work pad.
5. Pad Top Elevation: Elevation 863.00 is picked as it is out of water at low flow but will allow water to go over platform at high water. We will only work on platform during low flow. When TVA is generating, we will move all equipment, tools and materials off pad to land at Treatment Plant site.

Mr. J. Ruben Hernandez  
Corps of Engineers  
August 26, 2005  
Page 2

Pad Marking/Lighting: Pad lighting/marking will be accomplished by floating lights/markers tied to anchors. The water raises/lowers +/- 6' based upon generating requirements.

Pipe Trenching Work: Pad will flood during TVA generating. We plan to only work on pad at low flow times.

- 8 Blasting: Blasting will be done through the work pad. Spoil material will be hauled to Treatment Plant site.
- 9 Construction Schedule: Construction schedule will remain roughly the same. At this point using barges only as we have thus far schedule would increase. The reasoning behind work pad is to find a plan that works better than what we are doing, now that we have worked in this river several months and better understand its characteristics.
10. Endangered Species: Discussed in #2. We will do whatever is required to meet all permit regulations. A waiver to leave pad in river during winter months would be helpful.

Thanks again for considering this request

Contact the writer should there be any questions

Sincerely,

W. ROGERS COMPANY

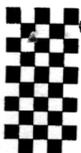


Tom McConathy  
Vice President

TM:th

Enclosure

cc: Stan Davis, TVA w/enc.  
Freddy Bennett, TVA w/enc.  
Capt. Paul A. Wiesner, Aquarius Marine w/enc.  
Benny Stump, WRC w/enc.



JOSE. r. hernandez @ us

Questions/Concerns  
Permit Modification Request  
File No. 200400150

Army.  
mil

1. Material Type/Source: Please indicate the source of this material. Would the material be clean rock with minimal amount of fines and free of waste products?
2. Work Duration: How long will the pad be in place?
3. Material Installation/Removal: Please describe the equipment and methods planned for placing and removing the material. Where the material would be disposed of once it is removed from the river?
4. Pad Length: Could you avoid placing the pad segment between the shoreline and existing gravel bar (i.e., roughly Sta. 0+00 and 2+50) to alleviate concerns for possible obstruction of the Little Pigeon River flows?
5. Pad Top Elevation: Please explain your reasons for setting the top of the pad at Elevation 863.0.
6. Pad Marking/Lighting: Describe what equipment or system(s) you have in mind to accomplish this task.
7. Pipe Trenching Work: If water were to cover the pad, would you still be able to excavate through and/or blast? If so, please indicate the maximum amount of water over the pad that would still allow you to do your work.
8. Blasting: Please clarify whether you can blast to open the pipe trench with the pad in place or you would need to blast first and then place the pad over the fractured bottom.
9. Construction Schedule: Your original construction schedule was 16 to 20 months. How will this change affect your overall construction schedule?
10. Endangered Species: Your Corps permit requires that work in the river cease from December 15 through March 31. How would your revised plans allow you to avoid working in the river during the snail darter spawning season?

Post-it* Fax Note	7671	Date	8/26/05	# of pages	1
To	TOM McCONATHY	From	RUBEN HERNANDEZ		
Co./Dept.	W. ROGERS Co.	Co.	USACE		
Phone #	859/231-6290	Phone #	615/369-7519		
Fax #	859/231-6296	Fax #	615/369-7501		

# W. ROGERS COMPANY

September 13, 2005



## CORPORATE OFFICE

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Department of the Army  
Nashville District, Corps of Engineers  
3701 Bell Road  
Nashville, TN 37214

Attention: Mr. J Ruben Hernandez

RE: File No. 200400150  
McCroskey Island WTP  
Sevierville, TN  
WRC Job# 333

Dear Mr Hernandez:

Thanks for meeting again with Capt. Paul Wiesner and myself on September 8<sup>th</sup>. Find information requested below:

1. Attached find revised FMSM Engineers' drawing to reflect bridge over the Little Pigeon River as requested. Also find attached Jordan, Jones & Goulding drawings CG1.2 and CG1.4 which show fill area at New Treatment Plant site. Left over stone/rip rap will be incorporated within the shown fill areas.
2. Sequence of Construction: Upon approval, bridge will be installed taking two (2) weeks. Rip rap will be hauled across bridge and into river taking another two (2) to four (4) weeks. As we approach Station 8+00, it will be determined if we will need to fill to Station 11+00. 3700 CY of stone is required.

With bridge installed, it is requested year round work will be approved.



f.  
Mr. J. Ruben Hernandez  
Corps of Engineers  
September 13, 2005  
Page 2

Also enclosed is a copy of August 26<sup>th</sup> letter as part of proposal.

Contact the writer should there be any questions.

Sincerely,

W. ROGERS COMPANY



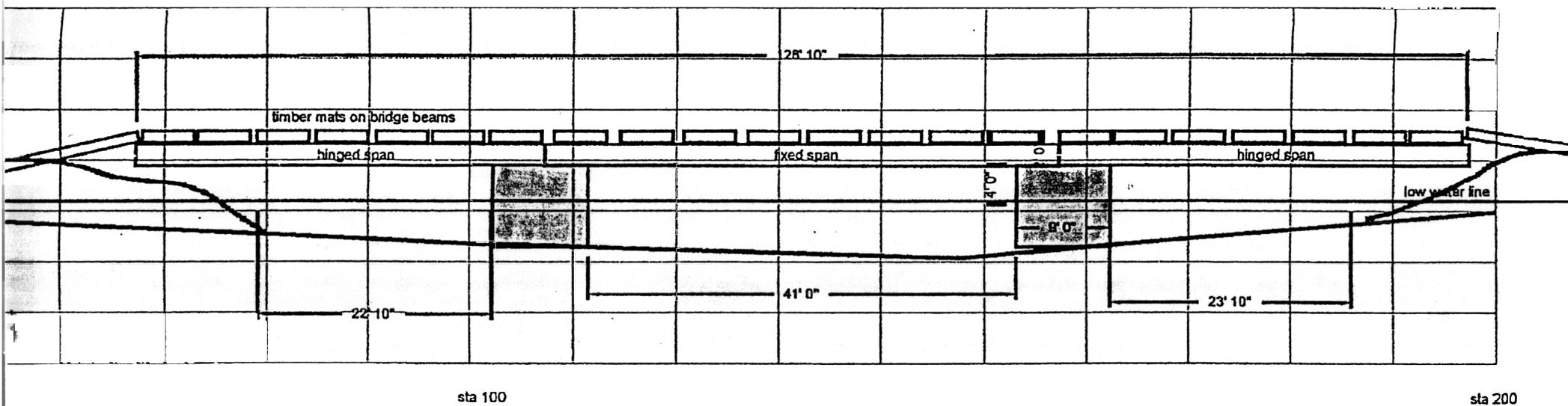
Tom McConathy  
Vice President

TM:th

Enclosure

cc: Stan Davis, TVA w/enc.  
Freddy Bennett, TVA w/enc.  
Robert Todd, TWRA w/enc.  
Jim Widlak, U.S. Fish & Wildlife w/enc.  
Ryan Blake, JJ&G w/enc.  
Scott Karns, JJ&G w/enc.  
Harry Price, JJ&G w/enc.  
Capt. Paul A. Wiesner, Aquarius Marine w/enc  
Benny Stump, WRC w/enc.





TEMPORARY BRIDGE

ELEVATION LOOKING DOWN RIVER

 STONE FILL

 SUNKEN BARGE