

February 2010

RE: Public comments on *Oak Ridge Reservation Natural Resource Damage Assessment Evaluation of Contaminant-Related Losses in Watts Bar Reservoir and Gains from the Black Oak Ridge Conservation Easement*

Dear Concerned Citizen:

In June of 2009, the *Oak Ridge Reservation Natural Resource Damage Assessment: Evaluation of Contaminant-Related Losses in Watts Bar Reservoir and Gains from the Black Oak Ridge Conservation Easement* was released for public review. A public meeting was also held regarding the evaluation on July 23, 2009. Three individuals and five groups sent in written comments before the review period closed. This correspondence is intended to address the questions and concerns raised in your comments. We hope it provides you with a better understanding of the full range of issues raised about the Watts Bar Reservoir natural resource damage assessment. As you will see, we have not presented the comments verbatim. If you would like a copy of all the original comments, please contact one of the trustee representatives listed below.

Thank you for providing your comments. We look forward to working with you in the future.

*The Oak Ridge Reservation Natural Resource Trustees*

#### Trustee Contacts

##### U.S. DOE

**David Adler**  
P.O. Box 2001  
Oak Ridge, TN 37831  
Phone: (865) 576-4094  
[AdlerDG@oro.doe.gov](mailto:AdlerDG@oro.doe.gov)

##### TDEC

**Debbie Duren**  
761 Emory Valley Road  
Oak Ridge, TN 37830  
Phone: (865) 481-0995  
[Debbie.Duren@tn.gov](mailto:Debbie.Duren@tn.gov)

##### U.S. DOI

**Steve Alexander**  
US Fish and Wildlife Service  
Tennessee Ecological Services  
Field Office  
446 Neal Street  
Cookeville, TN 38501  
Phone: (931) 528-6481  
[Steven\\_Alexander@fws.gov](mailto:Steven_Alexander@fws.gov)

##### TVA

**Michelle Cagley**  
1134 Swan Pond Road  
Trailer Park  
Harriman, TN 37748  
Phone: (865) 717-1636  
[amcagley@tva.gov](mailto:amcagley@tva.gov)



U.S. DEPARTMENT OF  
**ENERGY**



DEPARTMENT OF  
ENVIRONMENT &  
CONSERVATION



**Response to Public Comments on the *Oak Ridge Reservation Natural Resource Damage Assessment Evaluation of Contaminant-Related Losses in Watts Bar Reservoir and Gains from the Black Oak Ridge Conservation Easement***

To document the natural resource damage assessment (NRDA) for Watts Bar Reservoir, the Oak Ridge Reservation Natural Resource Trustee Council (Trustee Council; consisting of the State of Tennessee Department of Environment and Conservation, the Tennessee Valley Authority, the United States Department of Energy (DOE), and the United States Department of the Interior Fish and Wildlife Service) released for public review and comment the Final Draft Report, *Oak Ridge Reservation Natural Resource Damage Assessment: Evaluation of Contaminant-Related Losses in Watts Bar Reservoir and Gains from the Black Oak Ridge Conservation Easement* (Evaluation).

Comments were received from both individuals and organizations and covered a suite of topics. The Trustees have organized these comments into categories, and have provided the general comment pertaining to each category as well as a detailed response.

**General and Editorial Comments**

The public comments contained several suggested editorial improvements, endorsements supporting the assessment, and a suggestion for improvement of the NRDA process for the remaining assessment of the Oak Ridge Reservation. The Trustee Council appreciates the endorsements and is committed to evaluation of both the editorial comments in producing a final report and possible improvements for future NRDA efforts for the Oak Ridge Reservation.

**Contaminants of Concern**

*Comment:* Why was cesium not included as a contaminant of concern?

*Response:* The injury assessment does consider the impact of radionuclides (including cesium-137) on the natural resources of Watts Bar Reservoir. As described in Chapter 2 of the Evaluation, the Trustees specifically consider the potential impact of radionuclides on the natural resources in Watts Bar Reservoir for which data are available – that is, sediment/soil and resources exposed to sediment/soil. These site-specific data on radionuclide concentrations are then compared to benchmarks and screening levels that indicate the

concentration of radionuclides above which biota (e.g., invertebrates, fish, birds, and mammals) may experience an adverse effect. As cited on page 2-5 of the Evaluation, site-specific benchmarks were developed by DOE, and site-specific screening levels were developed by an independent expert at Sandy Cohen & Associates.<sup>1</sup> Concentrations of radionuclides in Watts Bar did not exceed any of these adverse effects levels, indicating that injury to natural resources in Watts Bar Reservoir due to radionuclides is unlikely.

### **Lost Property Values and Income**

*Comment:* What about compensation for lost property value (residential and commercial) due to contamination in the Reservoir, as well as lost income due to restrictions on commercial fishing?

*Response:* Congress has authorized state, Federal, and Tribal agencies to act on behalf of the public as “trustees” for natural resources. As trustees, these agencies can claim for injuries to natural resources and the services those resources provide (e.g., ecological functions and recreational opportunities) *to the public*. Any damages (i.e., monies) recovered for these injuries must be spent to restore natural resources. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) defines “natural resources” or “resources” as land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources managed by or otherwise controlled by the United States, any state or local government, any foreign government, or any Indian Tribe. The trustees are not authorized to seek recovery for private damages such as lost property value or lost income, nor can any monies recovered be provided as compensation to private parties.

### **Remedy Versus NRDA**

*Comment:* How are remedial decisions incorporated into the NRD process?

*Response:* At a contaminated site, there are often two separate but related processes that occur. The first is determination and implementation of a remedy. Typically overseen by EPA, remedial actions are designed to clean-up (i.e., remove and/or contain) contaminants at a site to reduce the risk of further “unacceptable harm” to humans and wildlife. Natural resource damage assessment activities, which occur *in addition* to remedial actions, are overseen by

---

<sup>1</sup> DOE. 1998. Radiological Benchmarks for Screening Contaminants of Potential Concern for Effects on Aquatic Biota at Oak Ridge National Laboratory, Oak Ridge, Tennessee. BJC/OR-80. Prepared for the U.S. Department of Energy, Office of Environmental Management, by Bechtel Jacobs Company LLC.

SC&A (S. Cohen & Associates). 2005. Evaluation of Potential Radiological Impacts in the Clinch River Watershed. June 22

natural resource trustees (i.e., designated Federal and state agencies not including EPA). NRDA's are designed to restore natural resources to their baseline condition (i.e., the condition of the resource but for the contamination), and to compensate for losses in natural resources and resource services over time (i.e., from the start of injury through restoration to baseline).

In this case, EPA's selected remedy for Lower Watts Bar Reservoir includes: institutional controls, fish consumption advisories, and annual monitoring. None of these actions actively remove contaminants from the system, instead relying on natural attenuation. The estimates of ecological and human use losses developed by the Trustees within the context of NRDA take this selected remedy into account by assuming a very slow recovery of the aquatic system over the next hundred years.

### **Black Oak Ridge Conservation Easement (BORCE) and Management**

*Comment:* Requests, suggestions, or comments regarding issues more directly applicable to the BORCE Final Management Plan dated February 2006 and the Indefinite Term Easement accepted by the State on March 14, 2005. Examples include: refining suite of allowable activities, revising the cost of operations and maintenance, and concerns regarding access.

*Response:* A majority of the suggestions and comments received are addressed in the BORCE Final Management Plan. Further management issues may be addressed to:

**Jim Evans**  
**Tennessee Wildlife Resource Agency (TWRA)**  
Phone: (865) 574-8204  
[Jim.Evans@tn.gov](mailto:Jim.Evans@tn.gov)

**Charles Spoons**  
**U.S. Department of Energy (DOE)**  
Phone: (865) 241-5869  
[spoonsca@oro.doe.gov](mailto:spoonsca@oro.doe.gov)

All trails on West Black Oak Ridge are now open, providing access to approximately 9.7 miles of trail on gravel roads. Open trail sections include Dyllis Orchard Road, West Ridge Road, Raby Road, Clack Road, and C-1 Powerline Road. The trailhead parking lot is located on Blair Road at the Department of Energy's Dyllis Orchard Road, just north of the Oak Ridge Turnpike and East Tennessee Technology Park. Parking and access are not allowed along Perimeter Road. The Indefinite Term Easement does not use the term "restricted areas," however, it does specifically note that the Lambert Quarry, the K-901A Pond, the Waste Burial Grounds, the Wheat Community Historic District including the George Jones Memorial Church, and any cemeteries known or unknown are excluded from the Easement area.

## **Easement Terms**

*Comment:* The terms of the Easement are not satisfactory because they are unsecured and can be revoked at any time.

*Response:* The Easement is a binding legal agreement between DOE and the Tennessee Wildlife Resources Agency for conservation and public use of Black Oak Ridge. Instead of a permanent easement (an easement imposed on a piece of property in perpetuity (i.e., forever)), the easement for Black Oak ridge is “indefinite.” That is, the easement is imposed in perpetuity unless one of a very limited suite of conditions occur, under which DOE is allowed to revoke the easement. These conditions include requiring Black Oak Ridge: 1) for national defense, 2) in response to a national emergency, or 3) for other DOE mission-critical purposes. The Trustees and DOE (both as a trustee and a responsible party) have considered the likelihood that DOE will require all or a portion of BOR for any of these purposes in the future, and at this time consider such needs to be of low probability. In the unlikely event that the Easement is revoked the Trustees will reconsider the NRD settlement.

In terms of the ecological and human use benefits provided under the Easement, these natural resource service gains would be calculated similarly whether the Easement is indefinite or permanent. First, because the likelihood that DOE will revoke the Easement is small, the timeframe and level of services provided by the Easement are likely similar under either the indefinite or permanent scenario. Second, the US Department of the Interior (DOI) NRDA regulations do not allow the Trustees to incorporate speculative changes in resources or resource services into a NRDA claim, either in terms of potential future injury and service losses or future restoration benefits. Therefore, the calculation of expected benefits under the Easement is not adjusted to account for the possibility that the BORCE may revert to DOE.

## **Benefit Type and Location**

*Comment:* The benefits estimated under the BORCE do not compensate for losses in Watts Bar - the counties, anglers, and environment affected by contamination are different than those receiving the benefits from resource conservation on Black Oak Ridge.

*Response:* The ecological and human use services expected to be provided under the BORCE do indirectly benefit the aquatic habitat and human users of Watts Bar Reservoir.

In terms of ecological resources and resource services, terrestrial (i.e., BOR) and aquatic (i.e., Watts Bar Reservoir) habitats, and the natural resources they support, are interdependent pieces of the larger Watts Bar Reservoir watershed. Just as degradation of one ecological component within the watershed is likely to adversely affect other components, preservation or restoration of one component is likely to benefit the overall ecosystem. As discussed in Chapter 3 (p. 3-8), in this case, preservation of upland, although not a direct replacement of

aquatic habitat, will provide substantial benefits to aquatic resources. For example, development typically increases runoff and erosion, which could transport chemicals (e.g., fuel from vehicles) and soil to creeks that flow into Watts Bar Reservoir. This degradation of water quality likely would have negative consequences for the biota that depend on the Reservoir (e.g., invertebrates, fish, birds, and mammals). Therefore, establishment of the BORCE and prevention of development and corresponding upland degradation prevent corresponding adverse effects to aquatic habitat within Watts Bar Reservoir.

While recreational benefits are expected under the BORCE, these benefits will be to different activities than the fishing impacts that have occurred at Watts Bar. In addition, participants in these two types of activities may differ. However, the requirements of CERCLA are that Trustees restore, replace, or acquire the equivalent of injured natural resources. In the case of the BORCE, the conservation easement will provide human use (e.g., biking, hiking, bird-watching) opportunities that will provide economic benefits to area recreators, and will offset the estimated economic losses associated with reduced value of recreational fishing at Watts Bar.

As noted above, the Trustees are aware that the BORCE does not provide direct benefits to Watts Bar anglers. Therefore, although the benefits of the Easement are sufficient compensation for losses, the Trustees will also identify a suite of restoration projects that will specifically benefit recreational fishing on Watts Bar and will provide further compensation for lost recreational opportunities in that area. For example, the Trustees are evaluating projects such as improvement of bank fishing and canoe/kayak access, installation of piers to facilitate boat launching and access, and installation of trails and augmentation of portals to facilitate and enhance bank fishing opportunities.

### **“Value” in the Context of NRDA**

*Comment:* The value assigned to the land parcels under the BORCE is inflated compared to the cost of the State of Tennessee purchasing the property directly.

*Response:* The value of a restoration action is not necessarily related to its cost. In this case the value of the action being proposed (the BORCE) has been described in the Evaluation. The cost of DOE providing the BORCE was not assessed by the trustees.

Under the DOI NRDA regulations, Trustees may seek to select and scale restoration projects sufficient to compensate the public for lost natural resource services. That is, the value (or scale) of resource benefits provided by selected restoration actions should be compared to the value (or scale) of resource losses due to the release of contaminants. In this case, the Trustees have determined that the value of resources and resource services expected to be provided to the public under the BORCE is sufficient to compensate for losses due to contamination in Watts Bar Reservoir. The cost of the action is not needed to make this determination.

## Compensation for Negative Public Perception

*Comment:* The assessment does not consider the loss incurred by the public due to public perception of water quality and resulting loss of use.

*Response:* The Trustees are aware of public concerns regarding water quality in Watts Bar Reservoir. The DOI regulations for damage assessment under CERCLA allow Trustees to claim for damages resulting from injury to a natural resource, and provide definitions of and methodologies for determining whether injury has occurred. Under these regulations, injury to surface water from the release of a hazardous substance has occurred when concentrations and duration of substances are:

*(i) In excess of drinking water standards established by sections 1141-1416 of SDWA, or by other Federal or State laws or regulations that establish such standards for drinking water, in surface water that was potable before the discharge or release;*

*(ii) In excess of water quality criteria established by section 1401(1)(D) of SDWA, or by other Federal or State laws or regulations that establish such criteria for public water supplies, in surface water that before the discharge or release met the criteria and is a committed use...as a public water supply; or*

*(iii) In excess of applicable water quality criteria established by section 304(a)(1) of the CWA, or by other Federal or State laws or regulations that establish such criteria, in surface water that before the discharge or release met the criteria and is a committed use...as a habitat for aquatic life, water supply, or recreation (43 C.F.R. § 11.62 (b)(1)).*

In this case, the Trustees determined that injury to surface water has not occurred. That is, observed concentrations of the contaminants of concern, such as PCBs, mercury, and radionuclides (including alpha activity and uranium), were below the drinking water standards, aquatic life criteria, and human health criteria established by the U.S. Environmental Protection Agency.

The Trustees also note that the U.S. Department of Human Health and Services Agency for Toxic Substances and Disease Registry published a Health Consultation for the Lower Watts Bar Reservoir Operable Unit in 1995. Their findings indicated that:

*Current levels of chemical and radiological contaminants in the Lower Watts Bar Reservoir surface water and sediment do not pose a public health hazard. The reservoir is safe for swimming, skiing, boating, and other recreational purposes. The drinking water from the municipal water systems along the reservoir is safe to drink (ATSDR 1995).*

The complete Health Consultation can be found at:  
[http://www.atsdr.cdc.gov/HAC/PHA/efork3/hc\\_p1.html](http://www.atsdr.cdc.gov/HAC/PHA/efork3/hc_p1.html).

## **Uncertainty**

*Comment:* Limited data and information may have led to incorrect conclusions regarding losses from contamination and gains from restoration.

*Response:* Values for injury and benefits are both estimated with uncertainty. For example, the estimated number of lost acre-years of ecological services in Watts Bar reservoir contains uncertainty related to actual levels of contaminants in the sediments, the site-specific toxicity of these contaminants, and the likely level of contamination in the future. The benefits of the easement also are estimated using best available information, but reflect some level of uncertainty as well. Reducing the level of uncertainty in these estimates would require expensive and time-consuming studies; even given the results of such studies, a substantial level of uncertainty would continue to be present in these estimates. The Trustees believe, at this time, that the proposed settlement provides the opportunity to assure conservation of an important parcel of contiguous land, an option that could be lost if the assessment were to continue.