



*Many Voices Working for the Community*

# Oak Ridge Site Specific Advisory Board

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May 19, 2014

Susan Cange  
Acting Manager  
Oak Ridge Office of Environmental Management  
U.S. Department of Energy  
P.O. Box 2001, EM-90  
Oak Ridge, TN 37831

Dear Ms. Cange:

## **Recommendation 222: Recommendations on Additional Off-site Groundwater Migration Studies**

At our May 14, 2014, meeting, the Oak Ridge Site Specific Advisory Board approved the enclosed recommendations on additional off-site groundwater migration studies.

These recommendations were the result of the Groundwater Strategy Document for the Oak Ridge Reservation (DOE/OR/01-2628/V1&V2/D1) that was developed in September 2013.

In summary, the recommendation requests that DOE proceed with an off-site groundwater quality assessment project and that DOE secure additional baseline funding for analysis to further understanding of potential migration and effects on off-site receptors.

We appreciate your consideration of our recommendations and look forward to receiving your response by August 14, 2014.

Sincerely,

*Dave Hemelright*

Dave Hemelright, Chair  
DH/rsg

Enclosure

cc/enc:

Dave Adler, DOE-ORO  
Dave Borak, DOE-HQ  
Fred Butterfield, DOE-HQ  
Kristof Czartoryski, TDEC  
Connie Jones, EPA Region 4  
Terry Frank, Anderson County Mayor

Melyssa Noe, DOE-ORO  
John Owsley, TDEC  
Mark Watson, Oak Ridge City Manager  
Ron Woody, Roane County Executive  
File Code 140



## Oak Ridge Site Specific Advisory Board Recommendation 222: Recommendations on Additional Off-site Groundwater Migration Studies

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### **Background**

A series of groundwater strategy workshops was held during 2013 to develop and prioritize groundwater pathways for the Department of Energy's (DOE) Oak Ridge Reservation (ORR). In addition to representatives from the Environmental Protection Agency, Tennessee Department of Environment and Conservation, and DOE, the ORR Groundwater Strategy Team included contractor representatives and a representative from the U.S. Geological Survey who acted as independent technical support and the interface and liaison between the ORR Groundwater Strategy Team and the Oak Ridge Site Specific Advisory Board. The workshops resulted in the development of a Groundwater Strategy document (DOE/OR/01-2628/V1&V2/D1).

### **Discussion**

The groundwater pathways and flows are complex on the DOE ORR. The potential for releases (chemical species and radioisotopes) from waste burial sites, storage areas, and past operations due to groundwater penetration over time is possible.

It is reasonable to extrapolate that off-site migration of contaminants is possible and merits further evaluation. Current data may not adequately reflect the future presence of contamination in off-site groundwater; therefore this potential condition warrants investigation. The protection of public health must be considered a priority; therefore potential health exposures to hazardous/radioactive species should be investigated.

### **Recommendations**

The Oak Ridge Site Specific Advisory Board recommends additional groundwater studies to address potential offsite migration of chemical species and radioisotopes. This recommendation is focused toward the development of information that will allow a better understanding of the potential impact of groundwater contaminants for the purpose of risk mitigation, groundwater remediation, and long-term stewardship.

Specifically, we recommend that:

- DOE proceed with the Off-site Groundwater Quality Assessment project, including: review of the existing monitoring well network (to include review of horizontal and vertical placement of well screens to ensure monitoring of groundwater systems), review of existing wells for determination of well integrity, abandonment of wells deemed not to be in appropriate locations and/or are of questionable integrity, and development of a monitoring plan (to include groundwater depth, water quality measurements, and hydrogeologic parameter determination) followed by implementation of the plan.
- DOE secure additional baseline funding for and perform interpretive analysis, (to include qualitative and quantitative modeling as appropriate) to further our understanding of potential plume migration pathways and potential effects on off-site receptors.
- With respect to the plume rankings developed in the Groundwater Strategy document, we note that these rankings are somewhat subjective therefore before adopting these rankings, we recommend that DOE:

- Develop process knowledge documents for each plume identified in the Groundwater Strategy document to support the interpretive analysis and assist with long-term stewardship.
- Review the method for plume rankings and confirm or revise the rankings.