



U.S. DEPARTMENT OF  
**ENERGY**

K-31/K-33 Area Groundwater Proposed Plan  
Public Meeting  
May 2023

# Overview

- Background
- DOE's Cleanup Strategy
- Scope of the Proposed Plan
- DOE's preferred alternative for the K-31/K-33 Groundwater Record of Decision
- Evaluation of alternatives
- Public input process
- Comments

## Background

- This Proposed Plan presents the U.S. Department of Energy's (DOE's) preferred alternative for extent of groundwater with contamination levels above drinking water standards in the K-31/K-33 Area at the East Tennessee Technology Park (ETTP).
- The purposes of this Proposed Plan are to solicit public comments, summarize the alternatives analyzed, identify the preferred alternative, and explain the rationale for the preferred alternative.
- Preferred alternative is monitored natural attenuation (MNA) with Land Use Controls that are in place at ETTP.

# Cleanup strategy and timeline

**1991**

**Tri-party Federal Facility Agreement signed**

DOE, U.S. EPA, State of Tennessee

**1990s**

**Early actions**

Off-site contamination  
High-risk/high-priority releases to the environment

**2000s**

**Watershed Interim Records of Decision signed**

Addresses numerous contaminant sources and building demolition projects

**2000s – 2024**

**East Tennessee Technology Park building demolitions and soil remedial actions complete**

**2023**

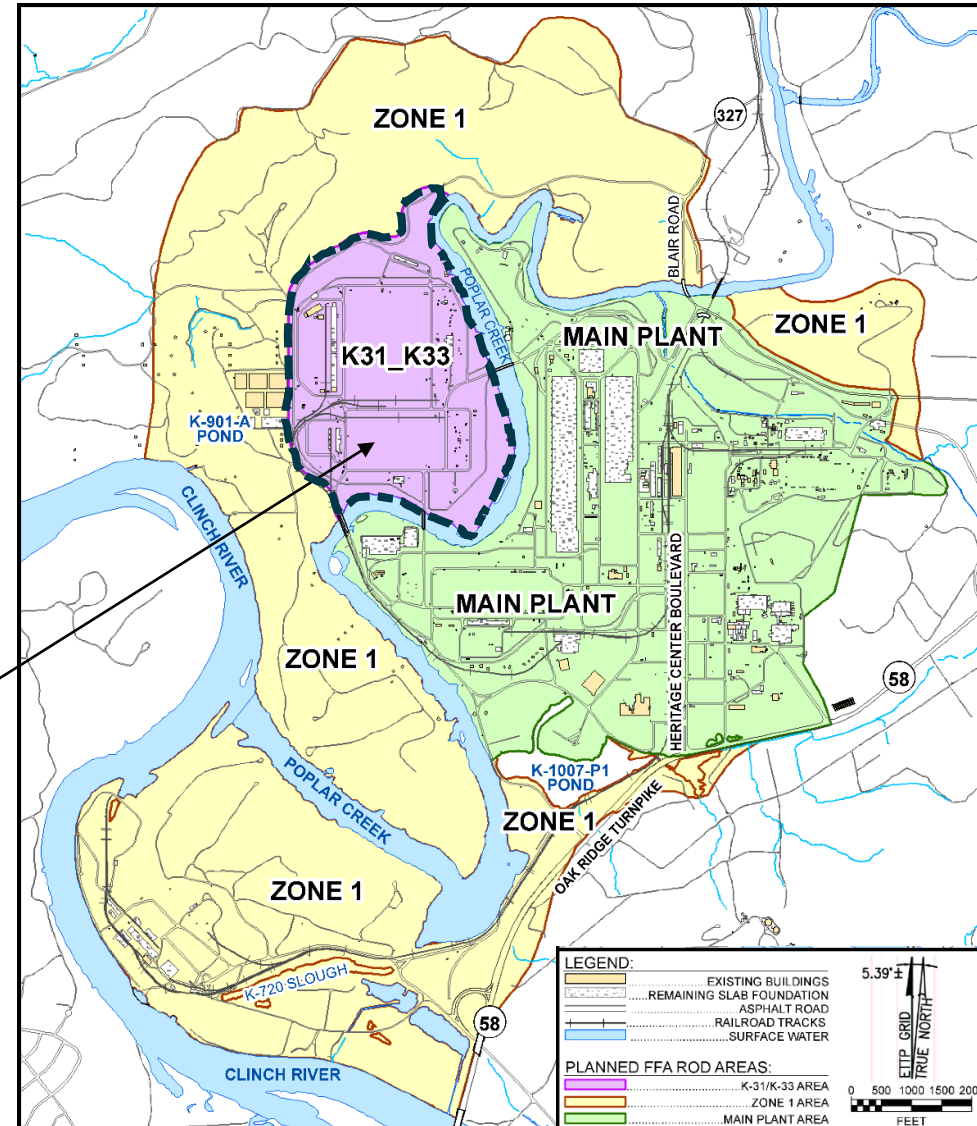
**Focus shifting to groundwater at East Tennessee Technology Park**

# Three ETTP groundwater Record of Decision geographical areas

- K-31/K-33
- Main Plant
- Zone 1

*The K-31/K-33 (in purple) is covered by this Proposed Plan.*

*Other portions of ETTP, including the Main Plant Area and Zone 1, are covered by other CERCLA projects.*

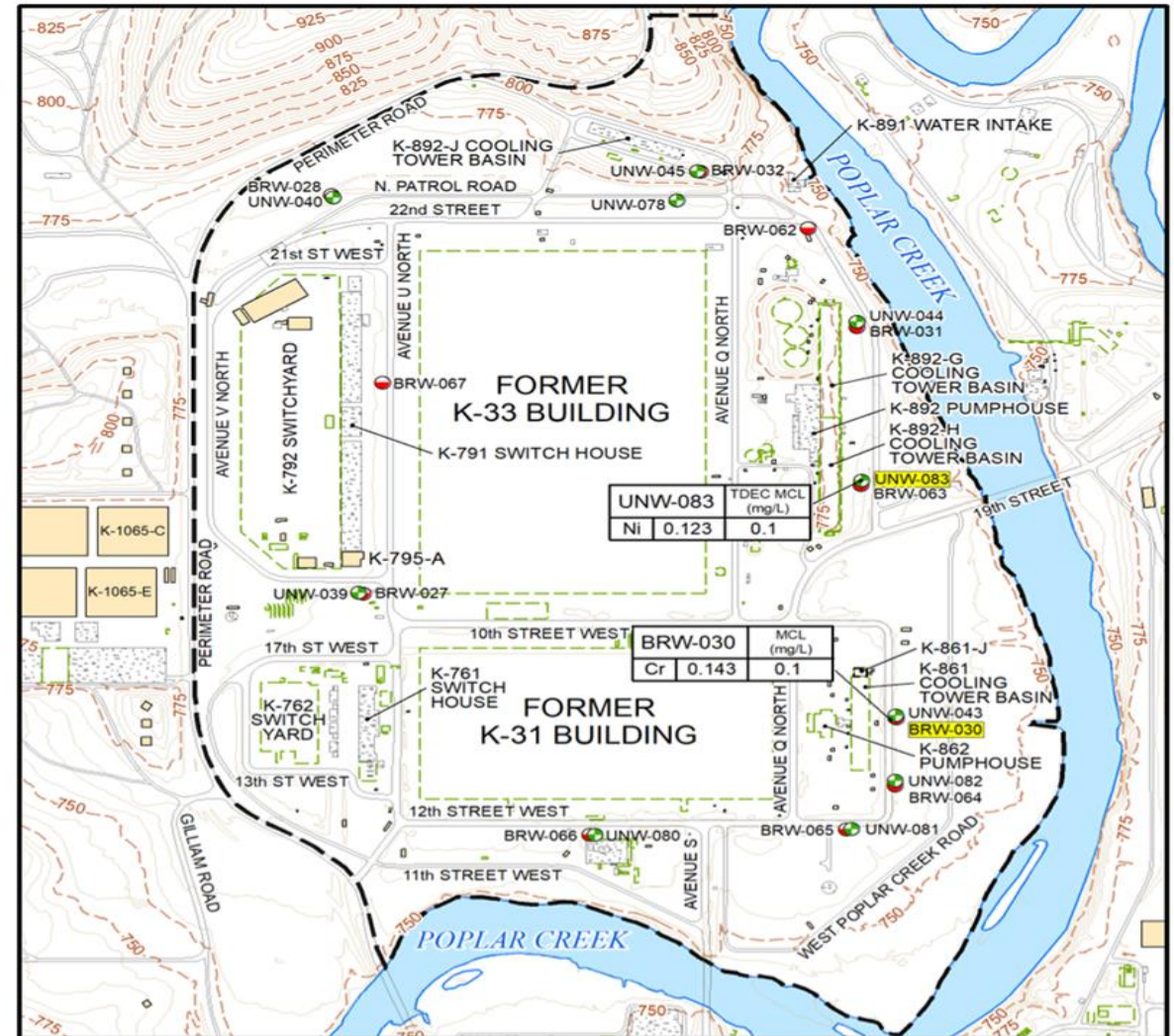


## Scope of the K-31/K-33 Proposed Plan

- Limited to groundwater in the K-31/K-33 Area
- Contamination recently has been detected in a limited number of K-31/K-33 groundwater monitoring wells
- Overall concentrations have exhibited a downward trend since monitoring began in the late 1980s
- Most recent sampling results show concentrations are currently above drinking water standards

## K-31/K-33 groundwater sampling

- In the last comprehensive sampling round for the K-31/K-33 Remedial Investigation & Feasibility Study, only 2 of the 21 wells yielded samples with constituents slightly above drinking water standards
- Existing land use controls under the ETTP soils RODs prevent use of or exposure to contaminated groundwater



## DOE evaluated three alternatives for the K-31/K-33 Area

**Alternative 1** – No action

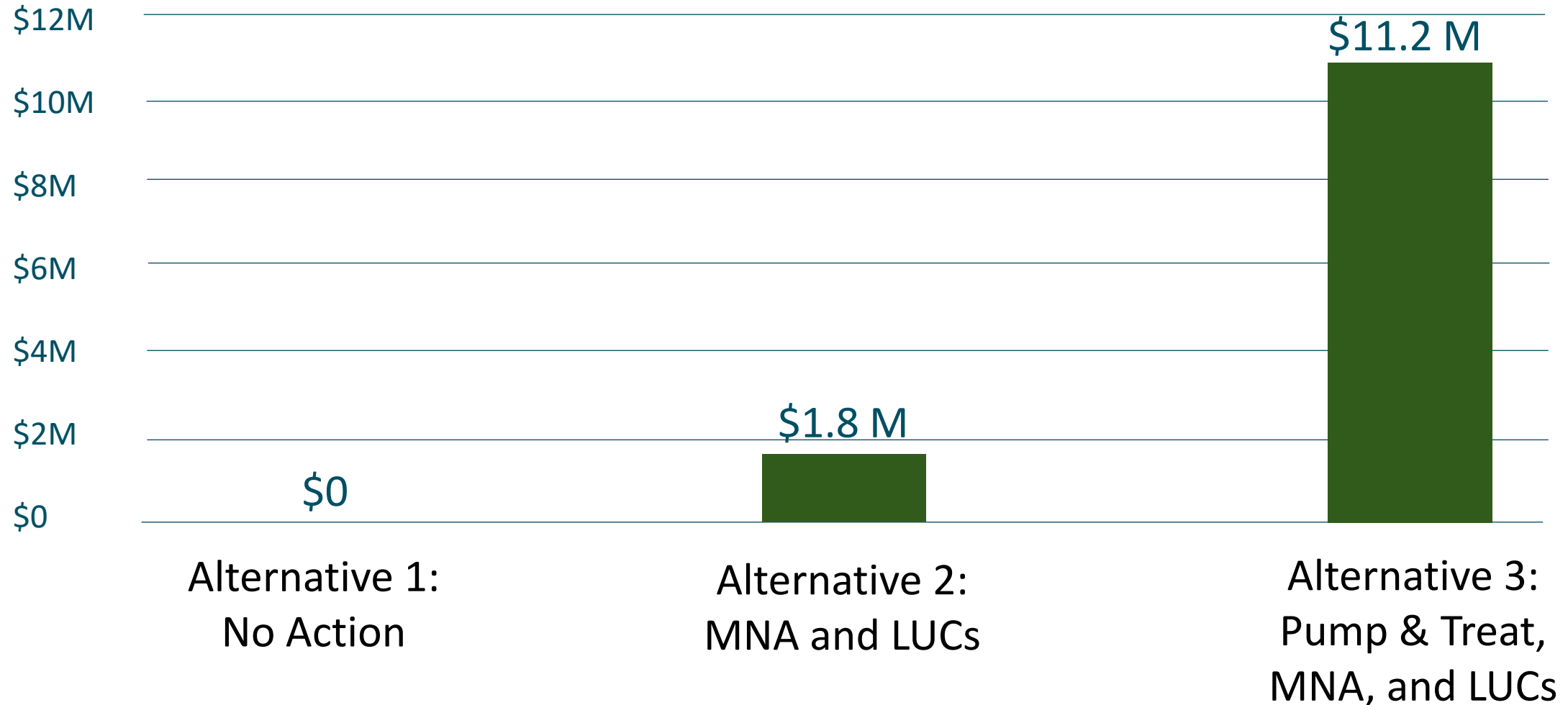


**Alternative 2** – Monitored  
Natural Attenuation and  
Land Use Controls

**Alternative 3** – Pump and Treat  
for specific locations with  
Monitored Natural Attenuation  
and Land Use Controls



## DOE evaluated costs for the three alternatives

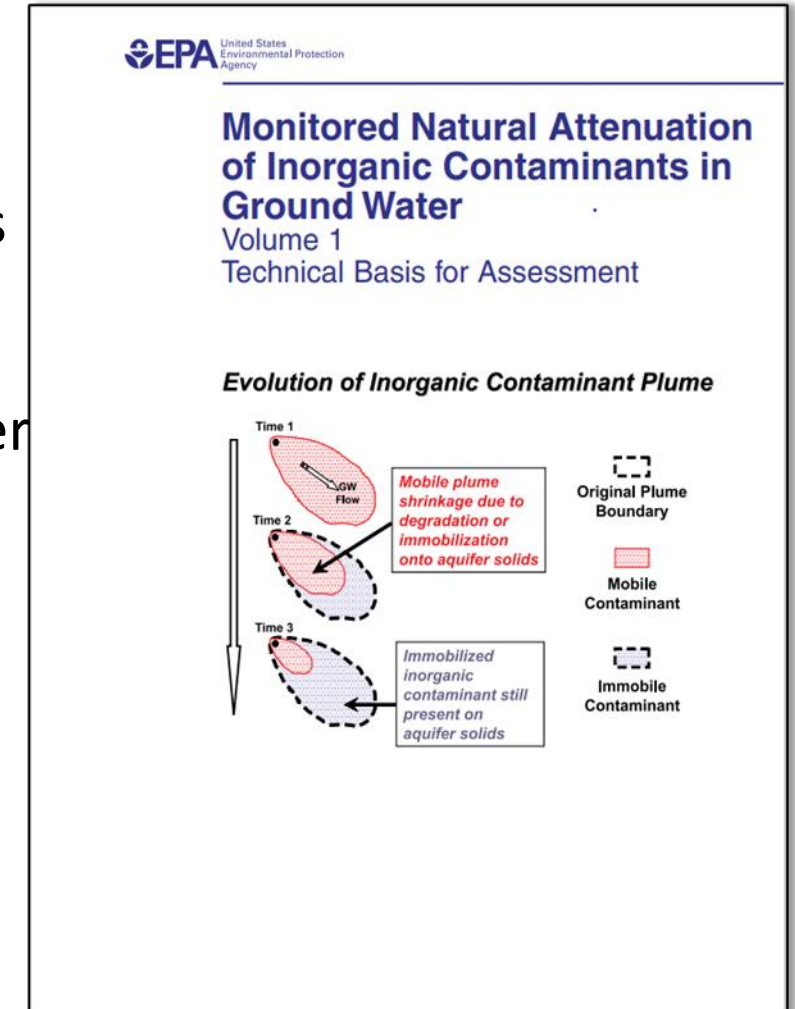


# DOE performed a detailed analysis of the three alternatives using the CERCLA decision criteria

- **Threshold criteria:**
  - Overall protection of human health and the environment
  - Compliance with Applicable or Relevant and Appropriate Requirements
- **Balancing criteria:**
  - Long-term effectiveness and permanence
  - Reduction of toxicity, mobility, or volume through treatment
  - Short-term effectiveness
  - Ability to implement
  - Cost
- **Modifying criteria:**
  - State acceptance
  - Community acceptance

# DOE's Preferred Alternative for K-31/K-33 Groundwater

- Monitored natural attenuation is an EPA-approved groundwater remediation approach that involves careful monitoring of natural processes that reduce concentrations of contaminants in groundwater
- This process involves continuous monitoring of groundwater conditions to measure and evaluate progress toward achieving remedial action objectives and until cleanup levels are attained
- Natural attenuation processes are applicable to chromium, nickel, and other inorganic contaminants in K-31/K-33

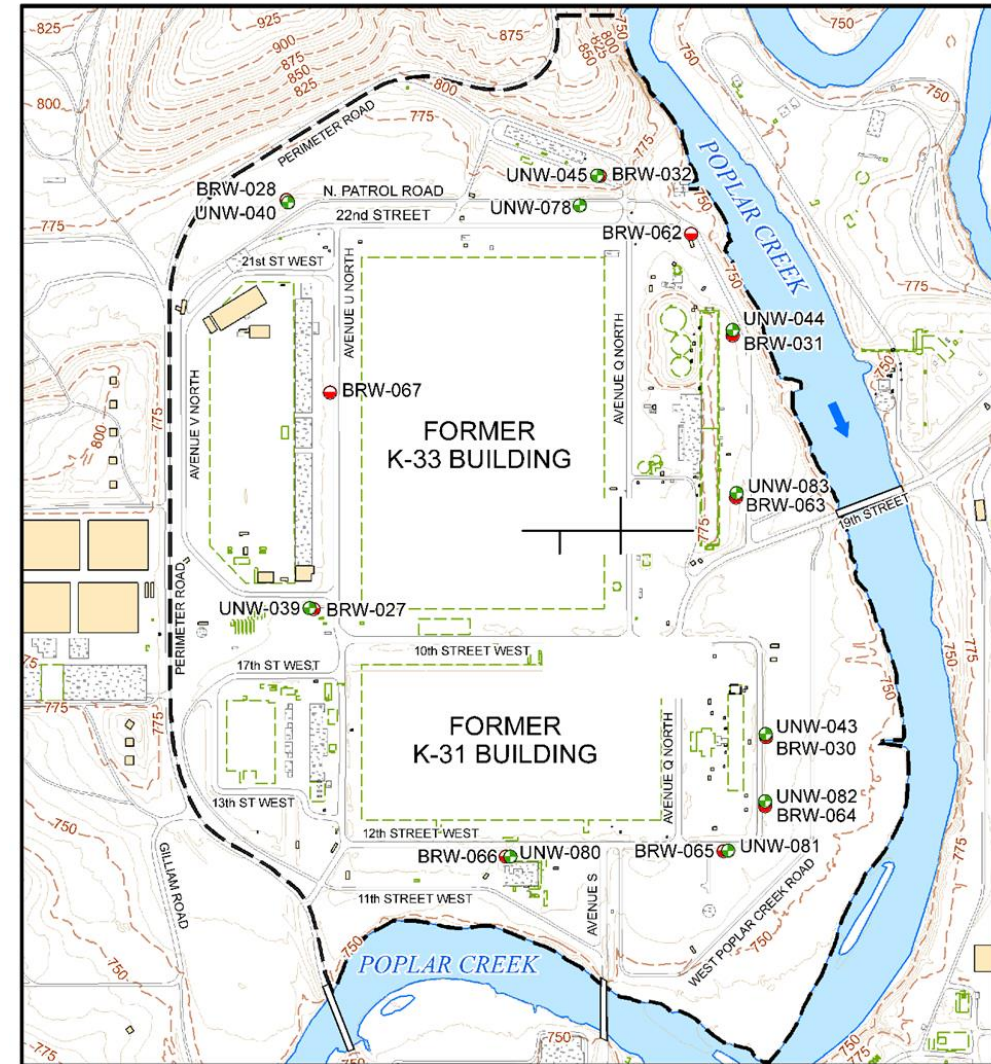


## Components of the Remedy

- First step is to develop a Remedial Action Work Plan that defines monitoring, evaluation, and reporting
- Monitoring will be quarterly for first 2 years, then on a semi-annual basis
- Monitoring results are reported annually to EPA and TDEC along with an assessment of progress toward groundwater restoration
- Land Use Controls related to groundwater use and potential exposures to contaminated groundwater has been implemented with monitored natural attenuation actions forthcoming

## K-31/K-33 Monitoring Wells

- Existing monitoring wells will be a key part of the preferred alternative
- DOE will work with EPA and TDEC to determine if additional wells are needed
- For cost estimate, it was assumed that eight additional wells may be needed
- Accessing existing wells for sampling or installing new wells will not impact current or future land uses/redevelopment



# The Preferred Alternative meets the statutory requirements of CERCLA

The proposed remedy for this K-31/K-33 ROD is protective of human health and the environment



The remedy is cost effective



Constitutes a permanent solution to the groundwater contamination in the area



Reduces groundwater contamination to meet drinking water standards



Achieves groundwater restoration within a reasonable timeframe



## Remedial Action Objectives for the K-31/K-33

- Restore groundwater to drinking water standards (federal and state)
- Prevent exposure to or consumption of contaminated groundwater until cleanup goals are achieved
- Prevent adverse impacts to surface water from the migration and discharge of contaminated groundwater into surface water

# Public comment period

**April 26 through June 12, 2023**

DOE will accept written comments on this project any time during the public comment period. Formal comments should be written and submitted to:

Mr. Roger Petrie  
OREM FFA Project Manager  
P.O. Box 2001  
Oak Ridge, TN 37831

or

[OakRidgeEM@orem.doe.gov](mailto:OakRidgeEM@orem.doe.gov)





# Proposed Plans for Future Decision Areas

