Oak Ridge Site Specific Advisory Board Monthly Meeting



Wednesday, June 12, 2024, 6 p.m.

The mission of the Oak Ridge Site Specific Advisory Board (ORSSAB) is to provide informed advice and recommendations concerning site specific issues related to the Department of Energy's (DOE's) Environmental Management (EM) Program at the Oak Ridge Reservation. In order to provide unbiased evaluation and recommendations on the cleanup efforts related to the Oak Ridge site, the Board seeks opportunities for input through collaborative dialogue with the communities surrounding the Oak Ridge Reservation, governmental regulators, and other stakeholders.

CONTENTS

AGENDA

PRESENTER BIO

CALENDARS

- 1. June
- 2. July (draft)

BOARD MINUTES/RECOMMENDATIONS & MOTIONS

- 1. Draft Recommendation on OREM FY 2026 Budget Request
- 2. Chairs Recommendation on EM SSAB Websites
- 3. Draft April 10, 2024, Full Board Meeting minutes for approval
- 4. Notice of Officer Elections/Expression of Interest

REPORTS & MEMOS

- 1. FY 2024 Incoming Correspondence
- 2. FY 2024 Travel Opportunities
- 3. Trip Reports
 - a. Kris Bartholomew
 - b. Mary Butler
 - c. Amy Jones
 - d. Sara McManamy-Johnson
- 4. Member Bios
- 5. Abbreviations & Acronyms
- 6. ETTP Main Plant Groundwater ROD (Selected pages)
- 7. ETTP ROD for K-31/K-33 Area (Selected pages)
- 8. Public Comment #1



Oak Ridge Site Specific Advisory Board Wednesday, June 12, 2024, 6:00 p.m. Hybrid meeting AGENDA

I.	Welcome and announcements (A. Jones)	. 6:00–6:05
II.	Comments from federal and state agency representatives (M. Noe, R. Petrie, S. Urquhart-Foster, K. Czartoryski)	. 6:05–6:10
III.	Presentation: Groundwater Remedy Selection at ETTP (S. Scheffler) Issue Group: Bartholomew, Butler, Jones, McCormick, McCurdy, Michaels, Sharpe – Members, please inform staff if you wish to join this or any other topic on the Wor	. 6:10–6:30 k Plan.
	 Questions regarding the presentation topic only. i. Board members ii. Guests – Indicate you wish to speak by standing. Online: use the "raise hand" action type your question in the chat. 	. 6:30–6:45 in Zoom or
IV.	 Public comment period (S. Kimel) i. Comments on other topics or concerns for DOE or the board – Comments previous to be read into the record. ii. Comments pertaining to this meeting will continue to be accepted by email to orssab@orem.doe.gov by no later than 5 p.m. EST on Monday, June 17, 2024. 	6:45-6:55 sly received
V.	 Call for additions & motion to approve agenda (A. Jones) A. Requests for new action items B. Next meeting – 6 p.m. August 14 for Annual Meeting & Workplan Development 	6:55
	This ends the presentation portion of the meeting – presenters and subject experts may a	lepart ——
VI.	 This ends the presentation portion of the meeting – presenters and subject experts may a Board Business (A. Jones) A. Discuss & Vote on FY 2026 Budget Recommendation B. Vote on Chairs Recommendation on EM SSAB Websites C. Vote to Approve Previous Meeting Minutes a. Minutes of April 10, 2024 D. Notice of Officer Elections/Expression of Interest 	lepart
VI. VII	 This ends the presentation portion of the meeting – presenters and subject experts may a Board Business (A. Jones) A. Discuss & Vote on FY 2026 Budget Recommendation B. Vote on Chairs Recommendation on EM SSAB Websites C. Vote to Approve Previous Meeting Minutes a. Minutes of April 10, 2024 D. Notice of Officer Elections/Expression of Interest I. Responses to recommendations & DDFO's report (M. Noe)	lepart 7:00-7:10
VI. VII.	 This ends the presentation portion of the meeting – presenters and subject experts may a Board Business (A. Jones)	lepart . 7:00–7:10 . 7:10–7:15 . 7:15–7:20
VI. VII. VII	 This ends the presentation portion of the meeting – presenters and subject experts may a Board Business (A. Jones)	Pepart . 7:00–7:10 . 7:10–7:15 . 7:15–7:20 on at ETTP und draft
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Sam Scheffler professional bio

Sam is the Groundwater and Water Quality Program Manager for the Oak Ridge Environmental Management office. He has been with DOE OREM just over 2 years.

Before joining DOE OREM, Sam worked for the UCOR subcontractor, RSI EnTech, as a field technician supporting water quality in the Water Resources Restoration Program.

Sam has a Bachelor of Science degree in Geology from the University of Tennessee, Knoxville.



June

2024

Topic: East Tennessee Technology Park Main Plant Groundwater Remedy Selections

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5 Executive Committee meeting – 4 p.m. (virtual)	6	7	8
9	10	11	12 Full Board Meeting – 6 p.m. (hybrid)	13	14	15
16	17	18	19	20	21	22
23	24	25	26 EM & Stewardship Committee meeting – 6 p.m. (hybrid)	27	28	29
30						

For information about attending meetings virtually or in person, please email orssab@orem.doe.gov at least 1 week prior to the scheduled meeting.

ORSSAB Support Office: (865) 241-4583 or 241-4584 **DOE Information Center:** (865) 241-4780



July (draft)

Topic: N/A

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 No Executive Committee meeting	4	5	6
7	8	9	10 No Full Board Meeting	11	12	13
14	15	16	17	18	19	20
21	22	23	24 No EM & Stewardship Committee meeting	25	26	27
28	29	30	31	29	30	31

2024

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Oak Ridge Site Specific Advisory Board Recommendation XXX: On the FY 2026 Oak Ridge Environmental Management Program Budget Priorities

Background

Each year the U.S. Department of Energy (DOE) Environmental Management (EM) Program develops its budget request for the fiscal year (FY) two years beyond the current year, including requests from DOE field offices to develop the EM Program budget request to the president.

DOE-EM Headquarters typically issues guidelines to the field offices advising them how much funding they should reasonably expect when developing their FY+2 budget requests. The field offices then brief the public, the regulatory agencies, and the respective site-specific advisory boards and seek input from each regarding budget requests.

On March 13, 2024, representatives from the Oak Ridge Environmental Management (OREM) program presented information about its FY 2026 budget formulation process to the Oak Ridge Site Specific Advisory Board (ORSSAB). This presentation provided content and discussions that ORSSAB used to draft its recommendations.

Discussion

In creating its recommendations for the FY 2026 OREM budget, ORSSAB focused on general near-term and long-term cleanup priorities identified by OREM. Project-specific objectives provided additional details for discussions that took place at the March 13, 2024, EM & Stewardship Committee meeting.

The board referred to the <u>OREM 10-year Program Plan</u>, the <u>EM Strategic Vision</u>, the current <u>EM</u> <u>Budget Request</u>, and the board's <u>previous Recommendations</u> for additional guidance on budget recommendations.¹

Recommendations

ORSSAB supports OREM's Program Plan and recommends fully funding the activities that are currently supported by that Plan for FY 2026, broadly understood as follows:

- Complete remediation and transfer all potential property at East Tennessee Technology Park (ETTP) for closure, including cleanup of physical debris/structures in Poplar Creek and along its shoreline.
- Continue demolition of excess contaminated facilities at Oak Ridge National Laboratory (ORNL) and Y-12 National Security Complex (Y-12).
- Continue to develop infrastructure to enable future cleanup at ORNL and Y-12.
 - Mercury Treatment Facility, including mercury remediation technology development.
 - CERCLA waste disposal facility, Environmental Management Disposal Facility (EMDF).
- Continue disposition of U-233 material.

¹ All documents are available on <u>www.energy.gov/orem</u> or <u>www.energy.gov/orssab</u>.

- Continue disposition and processing of legacy transuranic debris and sludges, including contact-handled (CH) and remote-handled (RH).
- Maintain and operate facilities at ORNL and Y-12.

With this support, ORSSAB recommends funding the FY 2026 budget to include all activities necessary to complete these cleanup priorities in an effective, timely and safe manner.

ORSSAB is also concerned about spending federal dollars in an effective, timely, and responsible manner. It believes OREM, with its contractors, have recently demonstrated an effective cleanup rate that leads the nation among federally funded facilities over a significant period of time; therefore, ORSSAB recommends OREM use this record of performance as a shining example of effective project management and as leverage to request additional funding beyond what is necessary to support the FY 2026 Program Plan above.

Further, ORSSAB recommends this additional federal funding be used to develop new knowledge and new technologies to effectively clean up transuranic waste, debris, and sludges – legacy, current, and future – starting in FY 2026 rather than waiting for an undetermined date in the future. ORSSAB believes that if Oak Ridge is to play a leading role in the nation's future nuclear renaissance, this is a reasonable recommendation and one where federal dollars will be wisely spent in the interests of our nation.

ENVIRONMENTAL MANAGEMENT SITE-SPECIFIC ADVISORY BOARD

Hanford	Idaho	Nevada	Northern New Mexico
Oak Ridge	Paducah	Portsmouth	Savannah River

INSERT DATE

Kelly K. Snyder Designated Federal Officer U.S. Department of Energy (DOE) Office of Environmental Management (EM) 1000 Independence Avenue, SW Washington, DC 20585

Dear Ms. Snyder:

Justification: As DOE Headquarters endeavors to update its website, the EM Site Specific Advisory Board (SSAB) has been requested to provide input for the EM SSAB website and its content.

In order to educate and inform future board members, interested community groups, and the public in general, we want to maintain a detailed archive of board activities that is easily accessible from the website.

Recommendation: The board recommends that the EM SSAB website maintain and keep documents related to board activities in perpetuity. The documents shall be in a searchable archival online location available to the public. These documents include, but are not limited to, recommendations, responses, and minutes.

Who We Are

The EM SSAB is the DOE EM's most effective vehicle for fostering two-way communication between DOE EM and the communities it serves. The EM program is the world's largest environmental cleanup program, and the EM SSAB its only citizen advisory board. For more than 20 years, the volunteer citizens of the EM SSAB have partnered with EM officials at both the local and national levels to ensure that the public has a meaningful voice in cleanup decisions.

Public participation is required/recommended as part of a number of environmental regulations. It is also good business practice, resulting in better decisions that often result in improved cleanup. Since 1994, EM SSAB members have volunteered thousands of hours of their time and submitted to EM officials over 1700 recommendations, 85% of which have been fully or partially implemented, resulting in improved cleanup decisions. The EM SSAB comprises approximately 200 people from communities in Georgia, Idaho, Kentucky, Nevada, New Mexico, Ohio, Oregon, South Carolina, Tennessee and Washington. The Board is cumulatively representative of a stakeholder population totaling millions of people who are affected by generator sites, transportation routes and disposal sites. As we move forward, the EM SSAB welcomes the opportunity to highlight the value of this unique volunteer board and discuss its priorities during the months and years ahead.

Susan Coleman, Chair Hanford Advisory Board Teri Ehresman, Chair Idaho Cleanup Project CAB Anthony Graham, Chair Nevada SSAB

Patricio Pacheco, Chair Northern New Mexico CAB Amy Jones, Chair Oak Ridge SSAB Don Barger, Chair Paducah CAB

Jody Crabtree, Chair Portsmouth SSAB Phyllis Britt, Chair Savannah River Site CAB



Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Monthly Meeting of the Oak Ridge Site Specific Advisory Board

DRAFT April 10, 2024, Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its full board monthly meeting virtually via Zoom and in person at 1 Science.gov Way on Wednesday, April 10, 2024, at 6 p.m. Copies of referenced meeting materials are attached to these minutes. A video of the meeting was made and is available on the board's YouTube site at www.youtube.com/user/ORSSAB/videos.

Members Present

Kris Bartholomew Mary Butler Harold Conner, Jr. Paul Dill Rosario Gonzalez Amy Jones Noah Keebler Mike Mark Thomas McCormick Harriett McCurdy Christine Michaels Charles Moore Tonya Shannon Michael Sharpe Rachel Stewart Tom Tuck

Members Absent

Atilio Anzellotti Candace Atkinson Raiyan Bhuiyan

¹Third consecutive absence

Liaisons, Deputy Designated Federal Officer, and Alternates Present

Melyssa Noe, ORSSAB Deputy Designated Federal Officer (DDFO), OREM Roger Petrie, ORSSAB Alternate DDFO, OREM Teresa Mathews, Oak Ridge National Laboratory (ORNL) Kristof Czartoryski, Tennessee Department of Environment and Conservation (TDEC) Samantha Urquhart-Foster, EPA

Others Present

Leah Alexander, OREM Jared Brabazon, TDEC Dana Casey, TDEC Emily Day, UCOR Abby Hill, OREM Shelley Kimel, ORSSAB Staff Sara McManamy-Johnson, ORSSAB Staff Tab Peryam, TDEC Erin Sutton, OREM Kelsey Waterson, TDEC

Three members of the public were present.

Liaison Comments

Ms. Noe – Ms. Noe began her comments by discussing a recent agreement between OREM and the national labor organization, North American Building Trades and Unions. She said the agreement will boost pay and benefits for workers in Oak Ridge, including a 20 percent wage increase over a three-year period, plus paid holidays and a retention bonus. She said OREM has been facing some attrition and this agreement will help OREM retain workers. Oak Ridge is the first EM site to do this.

Next, Ms. Noe said crews had finished a major infrastructure upgrade project for the waste treatment system at ORNL. The project included replacing two miles of piping at the Liquid and Gaseous Waste Treatment facility, which is essential for ongoing operations at ORNL. The work involved more than 5,000 hours of welding, and workers completed the project \$900,000 under budget and three months ahead of schedule.

Lastly, she said crews wrapped up early site preparations for the Environmental Management Disposal Facility (EMDF) and have moved into the second phase of the project, which is the groundwater fill demonstration study.

Mr. Czartoryski – No comments.

Ms. Urquhart-Foster – Ms. Urquhart-Foster said a per- and polyfluoroalkyl substances (PFAS) maximum contaminant level (MCL) was added that day to the Safe Drinking Water Act.

Presentation

Mr. Bartholomew introduced ORNL's Teresa Mathews to present the topic of discussion, Aquatic Ecology Research and Technology Development in East Fork Poplar Creek.

Ms. Mathews began her presentation by giving members an overview of ORNL's biological monitoring program, which has been underway for 40 years, and mercury remediation technology development program, which is in its tenth year. She said mercury contamination and remediation is very complex, so the lab utilizes the 40 years of history and expertise at the lab as well as partnerships across the site and the DOE complex and experts throughout the world in order to get the most cutting-edge science to apply in Oak Ridge.

Next, Ms. Mathews discussed mercury as a global pollutant. She said any remediation technology developed in Oak Ridge is applicable around the world. Mercury can undergo several different transformations in the environment; it can be oxidized or reduced through photo oxidation from the sun;

it can bind with dissolved organic matter in aquatic ecosystems; it can volatilize and travel for hundreds of thousands of miles before it settles back down to earth. She said the most important transformation is the methylation of mercury, which happens in aquatic ecosystems.

Mercury can be methylated to an organic form called methylmercury, which looks like an essential amino acid and so is readily taken up by cells and then not given up, so it tends to bioaccumulate in organisms. Humans' biggest dose of mercury comes from eating contaminated fish. She said because mercury is transformed in the environment, our exposure is affected by aquatic systems and risk and toxicity, and how we remediate is going to be very different based on these different forms.

Mercury is one of the only metals that is known to bio-magnify in aquatic systems, meaning it becomes increasingly concentrated as it moves up the food chain, and that is specifically true of methylmercury. EPA guidelines for mercury include both mercury in water and mercury in fish tissue, which is 0.3 micrograms per gram in fish fillet. She said that fish tissue guideline is considered to be a more accurate indicator of exposure and risk.

Ms. Mathews next discussed mercury pollution in the United States as a whole and globally, illustrating the widespread nature of mercury contamination.

She then discussed mercury in Oak Ridge and its origins. She said the world's stockpile of mercury was brought to Oak Ridge in the 1950s and '60s. During that time, mercury was used to separate lithium isotopes. About 11 million kilograms of mercury was used during that time and about 3 percent of that amount was lost to the environment. Since then, mercury remediation has focused on source control – water treatment systems, sewer relining, soil removal, etc.

Next, Ms. Mathews specifically discussed Poplar Creek in Oak Ridge. This creek runs from Y-12 National Security Complex (Y-12) into the City of Oak Ridge and is the largest stream on the Oak Ridge Reservation (ORR) at about 25 kilometers long.

She said the Aquatic Ecology Laboratory measures mercury concentrations in the water and in the fish, targeting fish that could potentially be for human consumption, so larger fish. Additionally, they collect water samples that are then taken back to the lab and exposed to lab organisms under controlled conditions. They also do field studies at various sites to make sure communities living in the creek are diverse because diversity in the aquatic community means good water quality.

Next, Ms. Mathews summarized the remediation actions taken over the years, which included water treatment systems, storm drains, cleaning or re-routing flows, soil removal or stabilization, and chemical additions. In 2019, construction also began on the Mercury Treatment Facility. She said a number of these actions have significantly decreased mercury concentrations in the water. Researchers have now started looking at ways to decrease methylmercury concentrations to further decrease concentrations in fish. She said there are three key factors that are recognized to control mercury concentrations in fish; first is the amount of mercury, next is the conversion of inorganic mercury to methylmercury, and then is the bioaccumulation of mercury through the food web.

She said this program was designed to address those three factors. The first task is decreasing mercury source inputs and flux by focusing on soil and groundwater source control; the second task is decreasing mercury concentration and methylation by focusing on water chemistry and sediment; the third task

focuses on ecology to decrease bioaccumulation. She then described some of the different studies the lab is doing or has done, including measuring erosion in certain areas along the stream and looking at ways to stabilize the soil, as well as looking at potential sorbents to add to the soil to remove mercury. Another study the lab has been doing involves looking at the capacity for mussels to filter mercury out of the water. She said East Tennessee and the Southeast in general are hotspots for freshwater mussels, which filter water and particulates over their gills to feed and in doing so affect water quality. The Aquatic Ecology Lab is working with the Tennessee Wildlife Resource Agency (TWRA) to re-seed local streams with native species of mussels.

Ms. Mathews said the take-home message is that because of the complexity of mercury itself and the local situation, there will not be just one solution. There may need to be a watershed-scale approach.

Board members asked the following questions:

- Ms. McCurdy asked what the advantage is of methylating mercury for the organism.
 - Ms. Mathews said there is no known advantage for the organism.
- Mr. Bartholomew asked if vegetation takes up the mercury.
 - Ms. Mathews said it does, so plants can be used as a phyto-remediator, however as you plant things you might decrease the water flow, which tends to accumulate organic matter and can ultimately contribute to a hotspot for mercury methylation. She said it's not that phyto-remediation is not an option, but caution would be needed. She said it is being discussed as a potential option for bank stabilization.
- Mr. Keebler asked what areas along the creek are of concern.
 - Ms. Mathews said there's a layer in the stream banks that is buried. One area is around kilometer 23, behind the National Oceanic and Atmospheric Administration (NOAA), and the other is by the old Bruners market.
- Mr. Keebler asked if there are any plans to remediate those areas.
 - Mr. Petrie said they were already remediated.
- o Ms. Michaels asked for additional description of sorbents and how they are disseminated.
 - Ms. Mathews said the different sorbents look very different; the particle sizes are different and how they behave in water are different. She said for this study, they were put in porous bags within mesh bags, and those bags were put in the soil.
- Ms. Stewart asked what mercury remediation activities have been done at other places that have been successful.
 - Ms. Mathews said there is a site in Virginia that's about 10 years ahead of us in terms of where they are in remediation, so the Aquatic Ecology Lab has been

active in those discussions and been collaborating with some of the scientists and students from there. She said their river is larger than ours, but it's a similar site.

- Mr. Czartoryski asked if any methylation was measured in the mercury absorbed during a year-long sorbent field deployment.
 - Ms. Mathews said they did not look at methylation during the field deployment because the sorbents were deployed over a period of a year and mercury can be methylated and then flow downstream, so there's no way to get to that question in the field. However, she said, there are currently long-term lab experiments underway.
- Mr. Conner asked how confident she was, based on lab studies, that the Mercury Treatment Facility (MTF) will make a difference in the methylmercury and downstream.
 - Ms. Mathews said she thinks it will be effective at the goal of the facility, which is to treat mercury coming out of Outfall 200. She said that is reducing mercury that is going downstream that would then be available for methylation.
- Ms. Jones asked how far downstream is tested for mercury.
 - Ms. Mathews said the biological monitoring program tests as far down as kilometer 6.3. They have also just deployed a monitoring station for water downstream of that, and there are also long-term monitoring stations downstream of the Oak Ridge Reservation (ORR) all the way to the Tennessee River. She said they sample throughout the Clinch River, both upstream and downstream of the ORR and then down to the Tennessee River.
- Ms. Butler asked if methylmercury accumulates in all tissues of the fish or just certain tissues or organs.
 - Ms. Mathews said it accumulates in all tissues, but especially in protein, so muscle tissues.

Public Question

- Public Question #1 Mr. Luther Gibson asked if they anticipated any impact on mercury from the Tennessee Valley Authority (TVA) shutting down the coal-fired plants.
 - Ms. Mathews said coal releases mercury into the atmosphere, so shutting down coal plants will definitely have an impact but she doesn't know the specific impacts.

Public Comment

• Public Comment #1 – Mr. Luther Gibson discussed ecological enhancement as a remedy in CERCLA decision documents and planning additional ORSSAB topics. (See attached.)

Board Business/Motions

- Ms. Jones asked for a motion to approve the agenda.
 - o 4.10.24.1 Motion made by Ms. Michaels and seconded by Mr. Keebler. Motion passed.
- Ms. Jones asked for a motion to approve meeting minutes.
 - 4.10.24.2 Motion to approve the March 13, 2024, meeting minutes.
 Motion made by Mr. Tuck and seconded by Mr. Moore. Motion passed.

Responses to Recommendations & DDFO Report

Ms. Noe said there were no open recommendations, but the board is actively working on the budget recommendation. She said Oak Ridge will be hosting the EM SSAB Chairs Meeting in September, so staff is working on the venue and will provide additional information after everything is confirmed.

Committee Reports

 $\underline{\text{Executive}}$ – Mr. Bartholomew said the committee met April 3 and discussed the fall chairs meeting and the new member orientation. He said the budget issue group hopes to have a draft recommendation available in time for the April 24 EMS committee meeting.

<u>EM & Stewardship</u> – Ms. Butler said the next committee meeting will be held April 24 and the committee will discuss and vote on the draft budget recommendation at that time. Additionally the committee will continue discussion on the current topic, although there is no recommendation being requested on this topic.

Additions to the Agenda & Open Discussion

Ms. Jones said the board will not meet in May, so the next meeting will be in June.

Action Items

None

The meeting adjourned at 7:10 p.m.

I certify that these minutes are an accurate account of the April 10, 2024, meeting of the Oak Ridge Site Specific Advisory Board.

Amy Jones, Chair

Harriett McCurdy, Secretary

April 10, 2024

Oak Ridge Site Specific Advisory Board

OFFICER ELECTIONS

It is time to consider the election of officers to the Chair, Vice Chair and Secretary positions on the board. We ask that you submit your interest to staff by July 29 so a potential slate of candidates can be announced at our annual planning meeting in August.

The vote will then take place as the first point of board business at the November meeting, which will be the first of the FY 2025 full board meetings. Nominations can be made from the floor at that time, but it is helpful to have a starting slate.

If you are not sure about these roles but would like to "get your feet wet," elections are also held for the Chair and Vice Chair of the EM & Stewardship Committee, which will be voted on at the November meeting of that body.

Please consider these leadership roles as part of your service to the board. Likewise, if there are members you believe would do well in a leadership role, encourage them to throw their name in!

If you are interested – whether you are a current member or officer - please email staff at your earliest convenience, but ideally by Monday, July 29. Please let us know if you don't want to be an officer but would like to nominate someone else.

As a reminder, elected officers:

- meet approximately once a month (generally the first Wednesday of the month) to discuss board business such as recommendations, following up on action items, and draft/approve meeting agendas;
- lead the monthly meetings;
- represent the board at occasional meetings, such as the EM SSAB Chairs Meeting twice a year to conference with other boards. Likewise, they are given priority for some travel/training opportunities.

It is preferred that the Chair have previous experience on the executive committee as vice chair, secretary, or EM Stewardship chair/vice chair, however, members may not serve in the same position for more than two consecutive years.

Status of Officer Positions

Chair – Amy Jones is ineligible to serve as Chair as she has served two consecutive years in this position Vice Chair – Kris Bartholomew may serve again in any officer position Secretary – Harriett McCurdy may serve again in any officer position



#	Date	То	From	Description	DOEIC, Notified board officers of
104	4/3/2024	Petrie, DOE	Sayer, EPA	EPA Comments: Update to the Administrative Record for the Record of Decision for Comprehensive Environmental Response, Compensation and Liability Act Oak Ridge Reservation Waste Disposal at the Environmental Management Disposal Facility, Oak Ridge, Tennessee (DOE/OR/1-2794&D2/R1)	DOEIC, Notified board officers of receipt
105	4/9/2024	Petrie, DOE	Young, TDEC	oung, TDEC Request for a DOE Briefing to the Federal Facility Agreement Parties Regarding DOE's Budget Planning Process	
106	4/11/2024	Urquhart- Foster, EPA; Young, TDEC	Hardin, Petrie, DOE	Transmittal of the Record of Decision for Groundwater in the K-31/K-33 Area at ETTP (DOE/OR/01-2950&D2)	DOEIC, Notified board officers of receipt
107	4/12/2024	Urquhart- Foster, EPA; Young, TDEC	Daffron & Petrie, DOE	Submittal of an Erratum to the Phased Construction Completion Report for the Bethel Valley Burial Grounds at ORNL (DOE/OR/01- 2533&D2)	DOEIC, Notified board officers of receipt
108	4/17/2024	Urquhart- Foster, EPA; Young, TDEC	Henry, Petrie, DOE	Transmittal of the Addendum to the Removal Action Work Plan for the Y- 12 Facilities Deactivation-Demolition Project, Oak Ridge, Tennessee, A-15 – Demolition of Steam Plant Complex Ancillary Facility 9616-9 (DOE/OR/01- 2479&D1/A15)	DOEIC, Notified board officers of receipt
109	4/18/2024	Urquhart- Foster, EPA; Young, TDEC	Hardin, Petrie, DOE	Transmittal of the Interim Record of Decision for Groundwater in the Main Plant Area at the East Tennessee Technology Park, Oak Ridge, Tennessee (DOE-OR-01-2949&D2)	DOEIC, Notified board officers of receipt
110	4/19/2024	Petrie, DOE	Young, TDEC	TDEC Approval Letter Addendum 2 for the Implementation Process to the Upper East Fork Poplar Creek Soils Remedial Action Work Plan, Oak Ridge, Tennessee DOE-OR-01- 2423&D2-A2-R1	DOEIC, Notified board officers of receipt



FY 2024 Incoming Correspondence

#	Date	То	From	Description	DOEIC, Notified board officers of receipt
111	4/19/2024	Newberry, DOE	Jones, EPA	EPA review of the document, Draft Environmental Baseline Survey Report for Clean Parcel Determination for West Black Oak Ridge, East Black Oak Ridge, and McKinney Ridge in the Vicinity of the East Tennessee Technology Park, Oak Ridge, Tennessee DOE-OR-01-2975	DOEIC, Notified board officers of receipt
112	4/22/2024	Urquhart- Foster, EPA; Young, TDEC	Henry, Petrie, DOE	Transmittal of the Phased Construction Completion Report for the Non-Time-Critical Removal Action Building 9404-18 Demineralizer Facility Mercury-Contaminated Systems Demolition at the Y-12 National Security Complex (DOE/OR/01-2929&D2)	DOEIC, Notified board officers of receipt
113	4/23/2024	Petrie, DOE	Young, TDEC	TDEC Transmittal of the Addendum 2 to the Remedial Action Work Plan- Waste Handling Plan for the Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, Oak Ridge, Tennessee Liquid and Gaseous Waste Operations DOE-OR-01- 2830&D1-A2-R1	DOEIC, Notified board officers of receipt
114	4/25/2024	Petrie, DOE	Young, TDEC	TDEC Record of Decision for Groundwater in the K-31-K-33 Area at the East Tennessee Technology Park, Oak Ridge, TN DOE-OR01-2950&D2	DOEIC, Notified board officers of receipt
115	4/26/2024	Petrie, DOE	Urquhart-Foster, EPA	EPA Extension Request for Response Regarding Addendum 2 to the Remedial Action Work Plan/Waste Handling Plan for Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, OakRidge, Tennessee: Liquid and Gaseous Waste Operations (DOE/OR/01- 2830&D1/A2/R1; Addendum 2)	DOEIC, Notified board officers of receipt
116	4/29/2024	Urquhart- Foster, EPA; Young, TDEC	Clemons & Petrie, DOE	Rescinding the Explanation of Significant Differences for the Record of Decision fo rthe Disposal of ORR CERCLA Waste, ORR: Haul Road Reroute (DOE/OR/01-2973&D1)	DOEIC, Notified board officers of receipt



#	Date	То	From	Description	DOEIC, Notified board officers of receipt
117	5/2/2024	Petrie, DOE	Young, TDEC	TDEC Comments: RE: Transmittal of the Waste Handling Plan for the Demolition of the Alpha-2 Complex Located at the Y-12 National Security Complex, Oak Ridge, Tennessee (DOE/OR/01-2877&02)	DOEIC, Notified board officers of receipt
118	5/2/2024	Urquhart- Foster, EPA; Young, TDEC	Daffron & Petrie, DOE	Transmittal of the Addendum to the Remedial Action Work Plan/Waste Handling Plan for Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, Oak Ridge, Tennessee: Facility and Equipment Deactivation/Small-Scale Demolition (DOE/OR/01-2830&D1/A4)	DOEIC, Notified board officers of receipt
119	5/2/2024	Petrie, DOE	Young, TDEC	TDEC Comments: Erratum to the PCCR for the Bethel Valley Burial Grounds at the ORNL (DOE-OR-01- 2533&D2)	DOEIC, Notified board officers of receipt
120	5/2/2024	Petrie, DOE	Dawson, EPA	EPA Approval: Erratum to the Phased Construction Completion Report for the Bethel Valley Burial Grounds at the Oak Ridge National Laboratory, Oak Ridge, Tennessee (DOE/OR/01- 2533&02)	DOEIC, Notified board officers of receipt
121	5/3/2024	Petrie, DOE	Young, TDEC	TDEC Comments FY 2024 PCCR for the ORR EMWMF (DOE-OR-01- 2968&D1)	DOEIC, Notified board officers of receipt
122	5/6/2024	Urquhart- Foster, EPA; Young, TDEC	Daffron & Petrie, DOE	U.S. Department of Energy Response to the U.S. Environmental Protection Agency Extension Request Regarding the Addendum 2 to the Remedial Action Work Plan-Waste Handling	DOEIC, Notified board officers of receipt



					DOEIC, Notified
#	Date	То	From	Description	board officers of
					receipt
123	5/6/2024	Petrie, DOE	Young, TDEC	TDEC Comments: Transmittal of Addendum to the Remedial Design Report/Remedial Action Work Plan for the Decontamination and Decommissioning of Non-Reactor Facilities in Bethel Valley at the Oak Ridge National Laboratory, Oak Ridge, Tennessee: Pre- Demolition and Demolition of Building 3544, Process Waste Treatment Plant, and Adjacent Facilities, Buildings 3518 and 3594 (DOE/OR/01- 2428&D2/A13)	DOEIC, Notified board officers of receipt
124	5/8/2024	Petrie, DOE	Dawson, EPA	EPA Comments: Addendum to the Remedial Design Report/Remedial Action Work Plan for the Decontamination and Decommissioning of Non-Reactor Facilities in Bethel Valley at the Oak Ridge National Laboratory, Oak Ridge, Tennessee: Pre-Demolition and Demolition of Building 3544, Process Waste Treatment Plant, and Adjacent Facilities, Buildings 3518 and 3594 (DOE/OR/01-2428&D2/A13)	DOEIC, Notified board officers of receipt
125	5/9/2024	Petrie, DOE; Young, TDEC; Urquhart- Foster, EPA	Begley, EPA	Signed Transmittal of ROD for Groundwater in the K-31/K-33 Area at ETTP DOE/OR/01-2950&D2)	DOEIC, Notified board officers of receipt
126	5/10/2024	Petrie, DOE	Dawson, EPA	EPA Comments: Addendum 2 to the Remedial Action Work Plan/Waste Handling Plan for Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, Oak Ridge, Tennessee: Liquid and Gaseous Waste Operations (Addendum 2)	DOEIC, Notified board officers of receipt
127	5/13/2024	Petrie, DOE	Young, TDEC	RE: Interim Record of Decision for Groundwater in the Main Plant Area at the East Tennessee Technology Park, Oak Ridge, TN (DOE/OR/01- 2949&D2)	DOEIC, Notified board officers of receipt



#	Date	То	From	Description	DOEIC, Notified board officers of receipt
128	5/14/2024	Petrie, DOE	Young, TDEC	Concurrence with Rescinding the Explanation of Significant Differences - Haul Road Reroute (DOE/OR/01- 2973&O1)	DOEIC, Notified board officers of receipt
129	5/15/2024	Petrie, DOE	Young, TDEC	TDEC Comments: Remedial Design Work Plan for the Environmental Oung, TDEC Management Disposal Facility, Oak Ridge, Tennessee (DOE/OR/01- 2971&D1)	
130	5/26/2024	Petrie, DOE	Young, TDEC	RE: TDEC Comment Letter for Remedial Investigation Work Plan for White Wing Scrap Yard (Waste Area Grouping 11), Oak Ridge Reservation, Oak Ridge, Tennessee (DOE/OR/01- 2970&D1)	DOEIC, Notified board officers of receipt
131	5/16/2024	Urquhart- Foster, EPA; Young, TDEC	Daffron & Petrie, DOE	Transmittal of the Addendum to Phased Construction Completion Report for Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, Oak Ridge, Tennessee	DOEIC, Notified board officers of receipt
132	5/17/2024	Petrie, DOE	Young, TDEC	Transmittal of the Addendum to Phased Construction Completion Report for Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, Oak Ridge, Tennessee	DOEIC, Notified board officers of receipt
133	5/20/2024	Petrie, DOE	Dawson, EPA	EPA Comments: Addendum to the Remedial Action Work Plan/Waste Handling Plan for Liquid and Gaseous Waste Operations at the Oak Ridge National Laboratory, Oak Ridge, Tennessee: Facility and Equipment Deactivation/Small-Scale Demolition (DOE/OR/01-2830&D1)	DOEIC, Notified board officers of receipt
134	5/22/2024	Petrie, DOE	Young, TDEC	TDEC Approval Letter Phased Construction Completion Report for the Non-TimeCritical Removal Action Building 9404-18 Demineralizer Facility Mercury Contaminated Systems Demolition at the Y-12 National Security Complex Oak Ridge, Tennessee (DOE/OR/01-2929&D2)	DOEIC, Notified board officers of receipt



#	Date	То	From	Description	DOEIC, Notified board officers of receipt
135	5/31/2024	Petrie, DOE	Dawson, EPA	EPA Comments: Remedial Investigation Work Plan for the White Wing Scrap Yard (Waste Area Grouping 11), Oak Ridge Reservation, Oak Ridge, Tennessee (DOE/OR/01- 2970&D1	DOEIC, Notified board officers of receipt

Travel Opportunities

Meeting/Event	Dates	Location	Cost	Additional Info			
FY 2024							
Waste Management Symposium Requests: Bartholomew, Jones, Bhuiyan	March 10-14	Phoenix, AZ	\$1,780	<u>www.wmsym.org</u>			
RadWaste Summit Requests: Jones , Michaels	June 3-5	Louisville, KY	875 (March 22 reg)	https://www.exchangemonitor.com/g o/radwaste-summit-2024/			
DOE National Cleanup Workshop Requests: Anzelotti [*] , Dill [*] , Bartholomew [^] , Jones [^]	Sept. 16-18	Arlintgon, VA	\$675 (July 9 reg)	www.cleanupworkshop.com			
2024 Fall Chairs Meeting <i>Board officers preferred</i> Requests: NA all invited	September 24-26	Oak Ridge	NA				
	FY	2025					
Waste Management Symposium Requests: Bhuiyan*, Jones^	March 9-13	Phoenix, AZ	\$1800 estimate	www.wmsym.org			
National Environmental Justice Conference & Training Requests:	March 25-27	Washington, D.C.	NA	http://thenejc.org			
2025 Spring Chairs Meeting Board officers preferred Requests:	Week of April 21	Hanford, WA	NA				
RadWaste Summit Requests: Jones	TBD Summer						
DOE National Cleanup Workshop Requests:	TBD September						
EPA National Brownfields Conference Requests:	TBD						
2025 Fall Chairs Meeting Board officers preferred Requests:							
Shaded trips are closed	Due to the com interest as soo If more members re-	plexity of arrang n as possible. So quest to travel tha	ing governn ome events n in an event w	nent travel, please indicate your nay book up to a year in advance. vill allow, the Executive Committee will			

*Requested previously, could not attend due to space available ^Defer to new attendees if space is limited



Oak Ridge Site Specific Advisory Board

TRIP REPORT

I.	Name of Traveler:	Kris Bartholomew
II.	Date(s) of Travel:	April 29 – May 3, 2024
III.	Location of Meeting:	Chillicothe, Ohio
IV.	Name of Meeting:	2024 Spring Chairs Meeting

V. Purpose of Travel:

Participate as ORSSAB Vice Chair for the 2024 Spring EMSSAB Chairs meeting.

VI. Discussion of Meeting:

<u>DAY 1</u>

Kelly Snyder, the designated federal officer for this meeting, began with introductions and opening remarks. There was discussion on past, present, and future topics that impact the 8 DOE sites represented at this meeting.

Justin Marble who is the director for the DOE EM National Transuranic Waste Program gave an overview of WHIPP goals and achievements, with more than 3,800 shipments processed safely, with a goal of 500+ shipments for fiscal year 2024.

Juan Uribe spoke on the newly formed consent-based siting project that was formed by DOE as directed by Congress to locate 1 or more federal interim storage facilities to store the current estimated 90,000 metric tons of commercial spent fuel. This directive is expected to take between 10-15 years. Engagements were started in April of 2023 and will only locate the potential storage site(s).

April Kluever spoke on the topic of PFAS and the recent EPA requirements on safe drinking water limits with regard to impacts at DOE sites. There is a new PFAS working group that includes every government department (with exception of Department of Education) to establish policy development. She stated there are currently no releases at the DOE sites and are only allowed in emergency situations. It is hard to establish a baseline for PFAS in any given area due to the easy migration that takes place with this toxin. Legacy contamination has occurred from linings that were used to protect piping from corrosion in gaseous diffusion plants.

Jeff Avery, the principal deputy assistant secretary, gave an EM program update with many positive achievements that have been made at the sites. The decommissioned Fernald site has been transferred to the Department of Legacy Management, following the 323 buildings that were demolished with 100 million tons of material disposed of. The site is now a reserve used as a public space. Recently there has been a chief technology officer named with the task of procuring new processes and technologies for future EM missions, an example is a newly received robotic pipe crawler at the Portsmouth site used for inspection purposes. Mr. Avery stated that aligning and engagement gives the best success. He spoke on the importance of staying ahead of the needs in regard to waste disposal sites.

<u>DAY 2</u>

Discussion took place with open dialog on the outreach programs that each site has implemented for community awareness and for board recruitment. There were many ideas shared by each site represented which included posters, community center meetings, social media outlets, and mailers. To finish the meeting, the board gave input in regard to the DOE website and the long-term access to past minutes. The framework was started for a recommendation to keep information available for public access for perpetuity on the DOE website.

VII. Significance to ORSSAB:

During the meeting 8 EM site advisory boards were able to discuss achievements and short falls in a productive way that fostered ideas that can benefit each location to better serve the communities that are represented. There were updates on milestones reached and new future goals outlined by DOE, with this information I hope to be better informed to help with input on future ORSSAB meetings.

VIII. Names & Telephone Numbers of Significant Contacts:

None

IX. Action Items:

If anyone has any questions or would like more details in regards to this trip, please feel free to contact me.

X. Traveler's Signature & Date:

Signature: Kris Bartholomew Date:

Date: <u>5/5/2024</u>



Oak Ridge Site Specific Advisory Board

TRIP REPORT

I.	Name of Traveler:	Mary Butler
II.	Date(s) of Travel:	04/29/2024 to 5/3/2024
III.	Location of Meeting:	Chillicothe, OH
IV.	Name of Meeting:	EM SSAB 2024 Spring Chairs Meeting

V. Purpose of Travel:

I traveled to this event to learn about other EM SSAB sites, meet other EM SSAB folks and hear from headquarters about various topics.

VI. Discussion of Meeting:

The meeting was comprised of 1 $\frac{1}{2}$ days of tours and 1 $\frac{1}{2}$ days of meeting time.

A. Tours

- 1. <u>Portsmouth Gaseous Diffusion Plant (PORTS) tour</u> we learned about the clean up work they're doing at this legacy site where uranium was enriched during the Cold War era.
 - D&D on legacy buildings; their "open air demolition" is monitored by numerous sophisticated air monitors that sample contaminants in the air and report all results to the public via a website.
 - Remediation of TCE plumes in soil; their approach is to remove all the TCE-contaminated soil and place it in their waste facility to fill open gaps and "tighten up" the facility.
 - Expansion of their waste management facility (OSWDF); using lessons learned from Oak Ridge's waste management experience, their site is estimated to last > 1000 years.
- 2. <u>Ohio State University Endeavor Center tour</u> we toured this site where research is ongoing to learn about agricultural plants and fish life.
- 3. Hopewell Culture National Historic Park visit we learned about the

nation's 25th world heritage site from a park ranger there. Quoting from the National Park Service website about this park (https://www.nps.gov/hocu/index.htm); "Nearly 2000 years ago, American Indians built dozens of monumental mounds and earthen enclosures in southern Ohio. These earthwork complexes were ceremonial landscapes used for feasts, funerals, rituals, and rites of passage associated with an American Indian religious movement that swept over half the continent for almost 400 years. Come walk among the earthworks and experience the past."

- 4. <u>Fernald Preserve visit</u> we drove 2 hours to visit this site. Once a uranium processing facility during the Cold War era, it was placed on the National Priorities List in 1989 due to contaminant releases into the environment. We met a group of strong local women who spoke truth to power in the mid 1980's when they uncovered a pattern of serious health issues in their community and ultimately tied these health issues directly to the contaminants. I believe these women spearheaded the creation of SSAB's across the nation and, certainly, showed our government leaders the importance of stakeholder collaboration in any national effort affecting a local community. Their input resulted in a \$4.4 billion cleanup effort and an award winning nature preserve/visitor's center with amenities open to the public.
- B. Meeting Time
 - <u>Waste & Transportation Update</u> I found this topic by Justin Marble, Director DOE EM National Transuranic Program, very informative on many levels. Most importantly, he addressed erroneous concerns about WIPP beginning to limit capacity. In fact, WIPP is expanding capacity (e.g. new Panel 11 mining began in December, 2023) and will continue to dispose of US defense TRU waste for decades.
 - <u>Consent-Based Siting Process</u> this was also an illuminating presentation by Juan Uribe, Senior Program Manager, Consent-Based Siting, Office of Integrated Waste Management, DOE Office of Nuclear Energy. It was interesting to hear how our government is working with local communities as it scouts out sites for the future. The "walk" matches the "talk" as local stakeholders are involved, from the beginning, in decisions that will affect their communities.
 - 3. <u>PFAS Overview</u> this topic was presented by April Kluever, Acting Director of DOE EM Subsurface Closure. I guess I've been living under a rock these past few years because I never heard of PFAS before. Now I'm aware and paying attention to these "forever chemicals" found in common household products. They don't chemically break down and may have negative health consequences.

- 4. <u>Cleanup to Clean Energy</u> Kristen Ellis, DOE EM Associate Principal Deputy Assistant Secretary for the Office of Regulatory and Policy Affairs addressed this topic, which provided further detail beyond the introduction at the "National Clean Up Workshop" last September in Washington DC. This initiative has the goal of repurposing underused DOE land to generate clean electricity in the future.
- 5. <u>EM Program Update</u> Jeff Avery, Principal Deputy Assistant Secretary, gave a broad overview of ongoing EM work and challenges across the complex.
- 6. <u>PORTS Future Use Workshop</u> we met with Stephanie Howe, Ohio University and Kevin Shoemaker, Southern Ohio Diversification Initiative to hear about their efforts to engage the local community and solicit public input into how the PORTS site should be used after cleanup. They concluded that the public wants the land to be reindustrialized with an emphasis on clean energy – specifically, hydrogen and nuclear. The community there sees a "win-win" in this by advancing our national interests and providing good, high paying jobs for members of the community.
- <u>EM SSAB Business</u> this included a round robin of all sites' accomplishments and other topics such as community awareness, board recruitment, a review of previous chairs recommendations, an open discussion and the generation of a new chairs recommendation to be forwarded to each local board for consideration.

VII. Significance to ORSSAB:

I think it's important for ORSSAB to know how important OREM is to other sites in the EM complex. From "open air" D&D to expanding a waste management facility (and at least 5 other examples in between), it wasn't lost on me how many times Oak Ridge was mentioned as a site that helped PORTS select the best approach to move forward based on "best practices" and lessons already learned at Oak Ridge.

Clearly, ORSSAB can learn from the Fernald experience as OREM completes its cleanup work at ETTP and Legacy Management (LM) eventually takes over. There was a two year transition from EM to LM at Fernald.

Finally, it was clear that community involvement and "buy-in" at all stages is important to the location being cleaned up and/or repurposed after clean up. This, combined with technical oversight by other capable regulators (e.g. EPA and TDEC), should provide successful results for all stakeholders.

VIII. Names & Telephone Numbers of Significant Contacts:

Available upon request.

IX. Action Items:

ORSSAB will need to consider & vote on a chairs' recommendation at its June meeting.

X. Traveler's Signature & Date:

Signature: _*Mary* Butler_ _____

Date:_5/28/2024_____



Oak Ridge Site Specific Advisory Board

TRIP REPORT

I.	Name of Traveler:	Amy Jones
II.	Date(s) of Travel:	April 30 – May 2, 2024
III.	Location of Meeting:	Chillicothe, Ohio
IV.	Name of Meeting:	2024 Spring Chairs Meeting

V. Purpose of Travel:

To attend the chair's meeting to receive updates on the process of the clean-up effects at each site as well as a make recommendation.

VI. Discussion of Meeting:

On the first day we were able to tour the Portsmouth site, attend a workshop during lunch and visit the Hopewell Culture National Historical Park and visitors center.

On the first day of the chairs meeting, Justin Mables from DOE Headquarters gave an update on WIPP, which is currently working at the speed of safety. Panel 1-4 are in use and Panel 5 is under construction, new air shafts (utility shafts) are installed. WIPP has a new 10 year permit.

Justin discussed the cleanup of legacy waster and creating a waste steam having disposal pathways and how headquarters have gotten involved in that discussion if there is not a disposal pathway in place for a site. EM doesn't work with commercial disposal companies, however they will way in the discussions. Justin stated that waste disposal is a very important part of the cleanup process.

Juan Uribe discussed integrated waste management system, consent-based sitting activities.

Public input was important from early consent based siting efforts. In order for this Consent based siting process must happen in stages starting with planning and capacity building, with communities that volunteer to have building in their communities, there is 3 stages and could take 10-15 years to complete. Environmental justice was also discussed.

April Kluever discussed PFAS, the 2024 drinking water standards with the maximum containments for PFAS were explained in detail, she mentioned there were a low number of labs that can test for PFAS however they are partnering with DOE labs to

become accredited. PFAS held roundtables with the sites to see where each site is and if more milestones can be reached and engage in discussion with stakeholders with the goal to have 100% of sites meeting the drinking water requirements.

Jeff Avery, Principal Deputy Assistant Secretary attended and discussed the tank waste are Savannah River, Hanford, and Idaho. He updated us on the landlord transfer at Savannah River, and that there are 17 shipments to WIPP weekly. Los Alamos will have about 40 tanks of waste this year, Nevada D&D missile Test C before demolition of EMAD, Oak Ridge ETTP almost complete, next demolition at Y-12 and ORNL. He stated focus of the future was important and the workforce is a concern along with recruitment and retention. Cleanup to Clean Energy is making great process at multiple sites. This was the main topic as we closed out the first day.

Day 2

Community Awareness was discussed, and suggestions were made by the Chairs. Keep board members engaged in key, community outreach is important, Kelly Snyder gave us some good information for current members waiting on their reapproval for additional terms, a 90 day intern if the preapproval is taking longer than planned. Also, a 6 year term can be extended if there is not a variable candidates.

During the Chairs discussion, recruiting was discussed and why did each of us join the board? I found this question and answers interesting. Discussion of the board members making suggestion is important and it might help for the board members to know where the board is missing members as far as female, location to the site adding diversity to the board

Group Discussion and writing the Chairs recommendation, before adjourning.

VII. Significance to ORSSAB:

The participation of ORSSAB members in environmental management plays a significant role in impacting the community surrounding the Oak Ridge Site. Engaging in Chair's meetings foster networking, education, and collaboration with other sites, enhancing the stewardship efforts of ORSSAB members. Presentations and discussions at these Chair's meetings address a diverse range of issues related to site decommissioning nationwide, each with unique considerations for restoring sites to safe, eco-friendly, and economically beneficial conditions for communities. This exchange of knowledge and best practices contributes to informed decision-making and sustainable environmental outcomes.

VIII. Names & Telephone Numbers of Significant Contacts:

None

IX. Action Items:

Chair's Recommendation made at the meeting will need to be voted on by the ORSSAB board member at the next meeting.

X. Traveler's Signature & Date:

Signature: _ Amy Jones_____

Date:_06/07/2024_____



Oak Ridge Site Specific Advisory Board

TRIP REPORT

- I. Name of Traveler: Sara McManamy-Johnson
- II. Date(s) of Travel: April 29 May 3, 2024
- III. Location of Meeting: Chillicothe, Ohio
- IV. Name of Meeting: EM SSAB 2024 Spring Chairs Meeting
- V. Purpose of Travel: Attend meetings; tour Portsmouth Site

VI. Discussion of Meeting:

On April 30, Chairs' meeting participants toured the U.S. Department of Energy's (DOE) Portsmouth (PORTS) site, the site of a former uranium enrichment facility. The tour included discussion on the site's decontamination and decommissioning (D&D) of legacy buildings and air monitoring measures implemented, trichloroethylene (TCE) plume soil remediation activities, and Portsmouth's on-site waste management facility.

Additionally, participants toured the Ohio State University Endeavor Center to learn about current agricultural and aquatic research.

Lastly, participants visited a local cultural landmark, the Hopewell Culture National Historic Park, a world heritage site featuring ancient Native American earth mounds used for feasts, funerals, rituals, and rites of passage.

Meetings on May 2 and 3 featured presentations and Q&A sessions with DOE leadership, including: Jeff Avery, DOE Principal Deputy Assistant Secretary; Justin Marble, Director of the DOE EM National Transuranic Program; Juan Uribe, Consent-Based Siting Senior Program Manager in the DOE Office of Nuclear Energy Office of Integrated Waste Management; April Kluever, Acting Director of DOE EM Subsurface Closure; Kristen Ellis, DOE EM Associate Principal Deputy Assistant Secretary for the Office of Regulatory and Policy Affairs; and Kelly Snyder, EM SSAB's Designated Federal Officer (DFO).

Highlights from Mr. Avery included:

- Progress across the EM Complex.
- EM safety performance.
- Recent EM accomplishments.

Highlights from **Mr. Marble** included:

- An overview of radioactive waste classifications
- Waste disposal considerations
- Waste disposal options
- Challenges in waste disposal

Highlights from Mr. Uribe included:

- Overview of current status of spent nuclear fuel
- Goals of consent-based siting
- Process for consent-based siting
- Consent-based siting participants

Highlights from Ms. Kleuver included:

- Overview of polyfluoroalkyl substances (PFAS)
- Discussion of recent DOE PFAS actions

Highlights from Ms. Ellis included:

- Overview of DOE's Cleanup to Clean Energy initiative, which aims to repurpose underused DOE land to generate clean energy
- Discussion of sites identified for use in the initiative

Highlights from Ms. Snyder included:

- Overview of lifetime EM SSAB Recommendations statistics
- Status of each recommendation submitted to DOE headquarters.

In addition to DOE/EM presentations, chairs from each SSAB shared highlights from their respective sites in a Chairs Round Robin presentation and discussed community awareness, board recruitment, and website archives timelines.

SSAB Chairs also considered a recommendation regarding SSAB record-retention standards on the Energy.gov website.

VII. Significance to ORSSAB:

This trip was important because it helped enhance my understanding of the cleanup efforts of DOE EM over the whole complex and its focus on near- and long-term cleanup efforts.

VIII. Names & Telephone Numbers of Significant Contacts:

Contact info for other SSABs available on request

IX. Action Items:

ORSSAB will need to consider and vote on a Chairs' recommendation.

Presentations and handouts from the event are available upon request.

X. Traveler's Signature & Date:

Signature: ______ Date: <u>5/31/2024</u>

ORSSAB 2024 Member Biographies

Atilio Anzellotti is a senior scientist with PETNET Solutions and a resident of Oak Ridge. He would bring a unique perspective to the board as he has dual citizenship (US and Venezuela). His B.S. and M.S. degrees in chemistry were received in Venezuela from the University of Los Andes and the Venezuelan Institute for Scientific Research, respectively. He received a Ph.D. in chemistry from Virginia Commonwealth University. Mr. Anzelotti is active in the community and is a member of the American Chemical Society and the Oak Ridge Environmental Quality Board. He is interested in environmental and public health issues.

Candace Atkinson is the lead 911 dispatcher for the Anderson County Sheriff's Office. She earned a bachelor of science degree in Occupational Safety and Health from Eastern Kentucky University holds a variety of health-related certifications related to her career in law enforcement and emergency services, including CPR and safety communications. She also holds various certifications from the Federal Emergency Management Agency (FEMA). She is a member of the Omega Nu Lambda National Honor Society and the Southern States Police Benevolent Association. Candace is interested in environmental, civic and public health issues. She lives in Oak Ridge.

Kris Bartholomew is the owner of Turn Key Plumbing and Construction, a small family-owned business. A high school graduate with some college, Kris has received licensures related to his trade. Those licenses include general contractor and subsurface sewage installer. He is interested in environmental and public health issues. He lives in Lenoir City.

Raiyan Bhuiyan earned a bachelor of science degree in Nuclear Energy Engineering Technology from Thomas Edison State University, where he was a recipient of the Nuclear Regulatory Commission Scholarship. He was also a graduate of the Naval Power School during his time serving in the U.S. Navy and has received certifications in CPR and as an IBM Data Science Professional. Raiyan is interested in environmental and workforce issues. He lives in Oak Ridge.

Mary Butler is a former staff pharmacist with Aurora Pharmacy. She received a bachelor of science in pharmacy from the University of Wisconsin. She retired to Rockwood in 2020 and is eager to engage in the community here as she was previously active in several organizations in her native Wisconsin. Mary is interested in civic and educational issues.

Harold Conner, Jr., is a senior engineering advisor with Strata-G. In this role, he focuses on supporting community outreach, university partnerships, student internships and mentoring. Harold is a former K-25 plant manager, serving from 1968-1996. He has bachelor of science and master of science degrees in Chemical Engineering from the University of Tennessee, Knoxville (UT), where he was the program's first African American graduate in 1968. He received his Ph.D. in Industrial and Systems Engineering from the University of Alabama at Huntsville. He is active in many community organizations including: the UT Knoxville Alumni board; the UT Tickle College of Engineering board; the STEM Scouts board; the American Museum of Science and Energy board; and Strata-G's board. He is a fellow of the American Institute of Chemical Engineers and the American Society for Engineering Management. He is also a lifetime member of the National Society of Black Engineers and the National Organization of Black

Chemists and Chemical Engineers. Harold lives in Knoxville and is interested in educational and minority issues.

Paul Dill retired in 2018 as a project manager with Project Enhancement Corp. He received a B.S. in industrial engineering/technology management from Roger Williams University and an M.A. in psychology from Ashford University. Mr. Dill also earned a Master Project Manager certification from the American Academy of Project Management. He is currently an associate member of the American Psychological Association and a member of the Society for Personality and Social Psychology. Mr. Dill lives in Oliver Springs, which includes portions of Anderson, Roane, and Morgan counties. He is interested in environmental and public health issues.

Rosario Gonzalez is a returning board member who served from 2016 through 2018. She recently retired as cafeteria manager of St. Mary's Catholic Church Cafeteria in Oak Ridge. She completed her secondary education in Mexico and received her GED from Pellissippi State. She lives in Oak Ridge and is interested in environmental and minority issues.

Amy Jones is the agency manager for Steve Pyatt Insurance and a licensed agent for Madison Insurance Group, serving as lead agent for their Georgia office and as senior benefits coordinator for their Medicare division. She is also a real estate agent at Stephenson Realty & Auction. She owned her own business, Double J Enterprises of TN, in Rocky Top, Tennessee, for more than 20 years. Amy is active in a variety of community organizations, including the Anderson County Chamber of Commerce, the Anderson County Headstart Policy Council, the Women's Ministry Banquet at Main Street Baptist, the Anderson County Republican Party, the Tennessee Republican Party, the Order of Amaranth, and the Order of the Eastern Star. She founded Christmas for Rocky Top Kids in 2018. She lives in Briceville and is interested environmental, economic, and county government issues.

Noah Keebler is a nuclear electronics technician with Ametek, which is a manufacturer of electronic instruments and electromechanical devices. Prior to that he was a radiological instrumentation specialist with Perma-fix Environmental Services. Mr. Keebler received an A.S. in Electrical Engineering from Roane State Community College. He holds a certification in Instrumentation from Ludlum Measurements and several other work-related certifications. Noah has Occupational Safety and Health Administration training, electrical safety experience and radiation worker training and is a member of the East Tennessee Chapter of the Health Physics Society. He has an interest in environmental issues. He lives in Knoxville.

Michael (Mike) Mark is a former first responder and hazmat professional. He earned a high school diploma and has many certifications related to his career. He lives in Harriman and is interested in environmental and economic development issues.

Thomas McCormick is the city manager for the Town of Oliver Springs, which includes portions of Anderson, Roane, and Morgan counties. He received a B.S. in political science from Middle Tennessee State University. He also has numerous certifications from the State of Tennessee, including as a water and wastewater treatment plant operator. He lives in Oliver Springs and is interested in city/county government and environmental issues.

Ann (Harriett) McCurdy retired in 2014 after more than 40 years as a teacher for middle- and highschool students both in the United States and abroad, with a focus on the sciences. Most recently she served as a teacher of science and biology for grades 6-10 at Yangon Academy in Yangon, Myanmar. Prior to that, she taught a variety of science courses and environmental studies courses in China, Morocco, Kuwait, and Ecuador. Harriett received an M.A. in teaching biology and her teaching certificate from Washington University and a B.A. in biology from Earlham College. She is a past president of the Oak Ridge League of Women Voters and a member of Tennessee Citizens for Wilderness Planning, which is dedicated to achieving and perpetuating protection of natural lands and waters by means of public ownership, legislation, or cooperation of the private sector with a focus on the Cumberland and Appalachian regions of Tennessee. Harriett lives in Oak Ridge and is interested in educational and environmental issues.

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Abbreviations/Acronyms List for Environmental Management Projects

- AM action memorandum
- ACM asbestos containing material
- ARARs Applicable or Relevant and Appropriate Requirements
- ARRA American Recovery and Reinvestment Act
- BCV Bear Creek Valley
- BG burial grounds
- BV Bethel Valley
- CARAR Capacity Assurance Remedial Action Report
- CART carbon steel casing dollies
- CBFO Carlsbad Field Office
- CERCLA Comprehensive Environmental Response, Compensation
 - and Liability Act
- CD critical decision
- CH contact handled
- CNF Central Neutralization Facility
- COLEX column exchange
- CS construction start
- CY calendar year
- D&D decontamination and decommissioning
- DARA Disposal Area Remedial Action
- DNAPL Dense Non-Aqueous Phase Liquids
- DOE Department of Energy
- DSA documented safety analysis
- DQO data quality objective
- EE/CA engineering evaluation/cost analysis
- EFPC East Fork Poplar Creek
- EM environmental management
- EMDF Environmental Management Disposal Facility
- EMWMF Environmental Management Waste Management Facility
- EPA Environmental Protection Agency
- EQAB Environmental Quality Advisory Board
- ETTP East Tennessee Technology Park
- EU exposure unit
- EV earned value
- FACA Federal Advisory Committee Act
- FCAP Facilities Capability Assurance Program
- FFA Federal Facility Agreement
- FFS Focused Feasibility Study
- FPD federal project director
- FY fiscal year
- GIS geographical information system
- GW groundwater

- GWTS groundwater treatability study
- HQ Headquarters
- HRE Homogenous Reactor Experiment
- IROD Interim Record of Decision
- ISD In-Situ Decommissioning
- LEFPC Lower East Fork Poplar Creek
- LGWO Liquid and Gaseous Waste Operations
- LLW low-level waste
- MLLW mixed low-level waste
- MSRE Molten Salt Reactor Experiment
- MTF Mercury Treatment Facility
- MV Melton Valley
- NaF sodium fluoride
- NDA non-destructive assay
- NEPA National Environmental Policy Act
- NNSS Nevada National Security Site (new name of Nevada Test Site, formerly NTS)
- NPDES National Pollutant Discharge Elimination System
- NPL National Priorities List
- OR Oak Ridge
- ORGDP Oak Ridge Gaseous Diffusion Plant
- OREIS Oak Ridge Environmental Information System
- OREM Oak Ridge Office of Environmental Management
- ORNL Oak Ridge National Laboratory
- ORO Oak Ridge Office
- OROP Oak Ridge Oxide Processing
- ORR Oak Ridge Reservation
- ORRR Oak Ridge Research Reactor
- ORRS operational readiness reviews
- PaR trade name of remote manipulator at the Transuranic Waste Processing Center
- PCB polychlorinated biphenyls
- PCCR Phased Construction Completion Report
- PM project manager
- PP Proposed Plan
- PPE Personal Protective Equipment
- QAPP Quality Assurance Project Plan
- RA remedial action
- RAR Remedial Action Report
- RAWP Remedial Action Work Plan
- RCRA Resource Conservation Recovery Act
- RDR Remedial Design Report
- RDWP Remedial Design Work Plan
- **RER Remediation Effectiveness Report**
- **RFI** Request for Information

RGRS – Reactive Gas Removal System

RH – remote handled

RI/FS – Remedial Investigation/Feasibility Study

RIWP – Remedial Investigation Work Plan

RmAR – Removal Action Report

RmAWP – Removal Action Work Plan

ROD – Record of Decision

RSE – Remedial Site Evaluation

RUBB – trade name of a temporary, fabric covered enclosure

S&M – surveillance and maintenance

SAP – sampling analysis plan

SEC – Safety and Ecology Corp.

SEP – supplemental environmental project

STP – site treatment plan

SW – surface water

SWSA – solid waste storage area

Tc – technetium

TC – time critical

TDEC – Tennessee Department of Environment and Conservation

TRU – transuranic, an artificially made, radioactive element that has an atomic number higher than uranium in the periodic table

TSCA – Toxic Substances Control Act

TWPC – Transuranic Waste Processing Center

U – uranium

UEFPC – Upper East Fork Poplar Creek

UPF – Uranium Processing Facility

URS/CH2M - (UCOR) DOE's prime cleanup contractor

VOC – volatile organic compound

VPP – Voluntary Protection Plan

WAC - waste acceptance criteria

WEMA – West End Mercury Area (at Y-12)

WHP – Waste Handling Plan

WIPP – Waste Isolation Pilot Plant

WRRP – Water Resources Restoration Program

WWSY – White Wing Scrap Yard

X-10 – Oak Ridge National Laboratory (refers to the original reactor)

Y-12 – Y-12 National Security Complex

ZPR – Zero Power Reactor

DOE/OR/01-2949&D2

Interim Record of Decision for Groundwater in the Main Plant Area at the East Tennessee Technology Park, Oak Ridge, Tennessee

Selected Pages from file - full file on request

Date Issued—April 2024

Prepared for the U.S. Department of Energy Office of Environmental Management

United Cleanup Oak Ridge LLC under contract 89303322DEM000067

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1.1 SITE NAME AND LOCATION

East Tennessee Technology Park (ETTP) Main Plant Area (MPA) Groundwater Oak Ridge Reservation (ORR) (U.S. Department of Energy [DOE]) National Priorities List (NPL) Site Oak Ridge, Tennessee

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Information System Identification TN1890090003

1.2 STATEMENT OF BASIS AND PURPOSE

This Interim Record of Decision for Groundwater in the Main Plant Area at the East Tennessee Technology Park, Oak Ridge, Tennessee (MPA Interim Record of Decision [ROD] [IROD]) presents the selected interim remedial action for six chlorinated volatile organic compound (CVOC) plumes in ETTP MPA groundwater in Oak Ridge, Tennessee. This interim action is chosen in accordance with CERCLA (as amended by the Superfund Amendments and Reauthorization Act of 1986 [SARA]) and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for the site. The interim remedy is intended to reduce the mass of contaminants in the most concentrated parts of the plumes that may serve as a source for associated dissolved-phase contamination. This interim action addresses some of the highest concentrations of CVOCs, primarily trichloroethene (TCE), in MPA groundwater. Other contaminants of concern (COCs) have been identified in the MPA and will be addressed as part of ongoing efforts to identify final remedial actions for the site.

This document is issued by DOE, as the lead agency. The U.S. Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation (TDEC) are support agencies as parties of the Federal Facility Agreement (FFA) for this response action. DOE and EPA have jointly selected the remedy for the site. TDEC concurs with the selected remedy.

Implementing this interim action will (1) help further define the extent of the six plumes, (2) reduce the concentration of CVOCs in the high-concentration areas of each plume, and (3) provide technology performance information that will be used in selecting final actions for these and other plumes at the site. Treating the high-concentrations plume source areas will not return the groundwater to unrestricted use. The selected remedy is an interim remedy, and land use restrictions will be required until groundwater contamination concentrations are below federal and state maximum contaminant levels (MCLs) and Tennessee groundwater quality criteria and the remedy is protective for all uses. The interim land use controls (LUCs) that are already in place at the site and selected in this MPA IROD will continue in effect and remain enforceable as part of the selected CERCLA remedy until such time as they may be changed by a future CERCLA decision. DOE has developed a Land Use Control Assurance Plan for the Oak Ridge Reservation (DOE/OR/01-1824&D0) to help ensure land use restrictions are maintained and periodically verified. DOE has also developed the East Tennessee Technology Park Administrative Watershed Remedial Action Report Comprehensive Monitoring Plan, Oak Ridge, Tennessee (DOE/OR/01-2477&D4; ETTP Remedial Action Report [RAR] Comprehensive Monitoring Plan [CMP]) that documents and tracks all interim LUCs. Compliance with these requirements is tracked annually in the ORR Remediation Effectiveness Report (RER) and in Five-Year Reviews (FYRs). DOE will maintain LUCs until concentrations of hazardous substances in the soil and groundwater are at such levels to allow for unlimited use/unrestricted exposure (UU/UE) or goals set forth in a final remedy are achieved. DOE is responsible for maintaining, monitoring, and enforcing such LUCs, including in the case these procedural responsibilities are assigned to another party by contract, property transfer agreement, or through other means. In these instances, DOE shall retain ultimate responsibility for remedy integrity.

Activities identified in this MPA IROD will be implemented and funded in accordance with the *Federal Facility Agreement for the Oak Ridge Reservation* (DOE/OR-1014; ORR FFA). The public will be

informed and involved in a timely manner in the CERCLA decision-making processes, consistent with requirements of CERCLA, the NCP, the ORR FFA, and the *Public Involvement Plan for CERCLA Activities at the U.S. Department of Energy Oak Ridge Site* (OREM-22-7619). Information supporting the selected remedy is contained in the Administrative Record file found at the Office of Scientific and Technical Information, 1 Science.gov Way, Oak Ridge, Tennessee, 37830. The center is open Monday through Friday, 8 a.m. to 5 p.m.; the telephone number is (865) 241-4780. This information is also available online. (Note the link will be provided in the Final IROD.) Documents pertaining to implementing and performing the interim remedial actions, including the annual ORR RER and FYRs, will be placed in a post-ROD file, which will be available to the public.

1.3 ASSESSMENT OF SITE

ETTP (formerly referred to as the Oak Ridge K-25 Site or the Oak Ridge Gaseous Diffusion Plant [ORGDP]) is located on the DOE ORR in Oak Ridge, Tennessee (Figure 1.1). The MPA is that portion of ETTP that generally coincides with the original 1945 footprint of the K-25 Site and includes most of the major facilities associated with the uranium enrichment process, chemical processing, and operational support activities. The MPA at ETTP is shown in Figure 1.2.

This MPA IROD addresses six CVOC source areas that are generally named for former buildings in the area of the plumes: Mitchell Branch Comingled Plume/K-1407-B, K-1401, K-25/K-1024, K-1035, K-27/K-1232, and K-1239, as shown in Figure 1.3. Additional areas of groundwater contamination are also shown on the figure and discussed in Chapter 2. Exposure unit numbers are associated with the *Record of Decision for Soil, Buried Waste, and Subsurface Structure Actions in Zone 2, East Tennessee Technology Park, Oak Ridge, Tennessee* (DOE/OR/01-2161&D2; Zone 2 Soil ROD) and are included on the figure to facilitate cross-referencing the plume nomenclature with the exposure unit numbers when cited in the document.

Releases of hazardous substances from the CVOC groundwater sources addressed by this MPA IROD present an endangerment to public health, welfare, or the environment. If land use restrictions that prevent access to or use of groundwater are maintained as directed by the MPA IROD, then on-site exposure to the public is minimized. If, however, contaminants leaching from these sources migrate toward off-site locations, additional remedial action may be warranted. A final remedial action will be taken in the future, if warranted, to address any unacceptable risk remaining at the conclusion of this interim action.

1.4 DESCRIPTION OF SELECTED REMEDY

The selected remedy for this MPA IROD is active treatment using enhanced in situ bioremediation (EISB) at the six CVOC groundwater plumes. Bioremediation is an engineered technology that modifies environmental conditions to encourage microorganisms to destroy or detoxify organic contaminants in the environment. The selected remedy includes continuation of LUCs that are currently in place at ETTP, specifically deed restrictions preventing groundwater use. This selected remedy is based on current information and satisfies the requirement to incorporate public comment.

Soil excavation projects implemented as required by the Zone 2 Soil ROD are addressing the principal threat(s) posed by soil sources that have contributed to the groundwater plumes. This MPA IROD further addresses principal threats posed by the contaminant sources that remain below the water table and/or within bedrock at the six CVOC groundwater plumes. Additional areas of concern will be identified and evaluated as part of the future MPA groundwater investigations.

Components of the interim remedy include the following:

• Additional data collection activities as part of a pre-design investigation (PDI) designed to help delineate the areas of contamination > 1000 μ g/L of individual CVOCs or 400 μ g/L of vinyl chloride (VC). This work will be scoped and performed under a Remedial Design (RD) Work Plan (WP) (RDWP).



Figure 1.2. Location of MPA at ETTP.



Figure 1.3. Groundwater source areas addressed in this MPA IROD based on data available for the MPA FFS, with exposure unit boundaries.

- As part of the PDI, groundwater wells and piezometers will be installed in the unconsolidated zone and bedrock to bound the horizontal and vertical extents of the plumes to design the EISB injection network. The PDI work will also involve sampling and analysis of geochemical and microbial parameters to assess the amendment substrate types that will be used.
- The PDI results, remedial action design, and remedial action implementation plan will be documented in an RD Report (RDR)/Remedial Action WP (RAWP).
- The RDR/RAWP will identify the injection well network well depths and screen intervals, carbon substrate that will be used, and injection rates of the substrate.
- The substrate used for injections is assumed to be commercially available, food-grade emulsified vegetable oil (EVO). Other substrates could also be used (e.g., EVO with zero-valent iron [ZVI]), and/or the EVO might be amended with other organics (e.g., lactate) plus buffers and bioaugmentation cultures.
- Remedial action fieldwork implementation includes drilling the injection wells and any additional associated performance monitoring wells and establishing the substrate delivery system.
- Operation and maintenance (O&M) activities include injections and follow-on groundwater monitoring. Due to the size and number of contaminant source areas addressed under this MPA IROD, activities will start with one plume source and move from site to site. Injections are not anticipated to occur simultaneously at more than one source area. For cost-estimating purposes, a second round of injections was assumed to begin at year 2 or 3, after all source areas have received the initial injections. The second round of injections will be followed by a 3-year period of post-injection monitoring.
- Post-injection monitoring will occur on a routine basis, with a focus on TCE and its breakdown products, as well as additional CVOCs and bioremediation metrics, as defined and approved by the FFA parties in an RDR/RAWP.
- As operations progress, optimizations of the injections may be carried out based on monitoring data. These optimizations would be designed to target treatment reagent distribution, reagent concentration, and resulting changes in microbial populations and geochemistry; optimization could include additional injections and changing the substrate mixture to optimize delivery to more challenging intervals within the formation.
- Annual reporting will occur either as part of the annual ORR RER or in a stand-alone document to be determined.
- This interim remedy is assumed to be evaluated for a 5-year period, starting from completion of the last injection area.

This interim decision was supported by the *East Tennessee Technology Park Main Plant Groundwater Focused Feasibility Study, Oak Ridge, Tennessee* (DOE/OR/01-2894&D2; MPA Focused Feasibility Study [FS] [FFS]) that evaluated a limited set of alternatives for which there have been considerable implementation experiences for similar site conditions and similar contaminants. As work progresses on this interim action, DOE simultaneously will be performing the steps required under CERCLA to identify the final actions for the MPA, as further discussed in Part 2 of this MPA IROD. This interim response action fits into the overall groundwater remediation strategy for the MPA by initiating groundwater restoration via interim action while additional data are collected and evaluated for the MPA. ETTP is the first site on the ORR to implement full-scale groundwater remediation under an IROD.

1.5 STATUTORY DETERMINATIONS

The selected interim remedy for this MPA IROD is protective of human health and the environment. This interim remedy is cost effective and satisfies the statutory preference for permanent solutions through treatment.

The interim remedy is consistent with any eventual final remedy, which, per the NCP, will restore groundwater to its beneficial use unless a waiver is invoked consistent with 40 Code of Federal Regulations (CFR) 300.430(f)(1)(ii)(C).

During the IROD period, protectiveness is achieved through a combination of ongoing LUCs and monitoring to ensure there are no exposures to unacceptable contaminant levels in groundwater. The action also removes contamination mass to address potential longer-term exposures.

The selected interim remedy is not intended to meet chemical-specific requirements of the Safe Drinking Water Act of 1974 $(SDWA)^1$ or Tennessee numeric or narrative groundwater quality criteria². Under the NCP at 40 CFR 300.430(f)(1)(ii)(C)(1), an alternative that does not meet an applicable or relevant and appropriate requirement (ARAR) may be selected when the alternative is an interim measure and the ARAR will be attained or waived as part of a total (i.e., final) remedial action. Thus, a waiver under CERCLA 121(d)(4)(A) is being invoked as part of this remedy because the MCLs under the SDWA and Tennessee groundwater quality criteria will not be met; however, the remedy will meet all applicable or relevant and appropriate action-specific and location-specific requirements. A final ROD (or RODs) for the MPA will demonstrate compliance with all federal and state requirements that are identified as ARARs, including any potential ARAR waivers.

Because this selected remedy will result in hazardous substances, pollutants, or contaminants remaining onsite above levels that allow for UU/UE, a statutory review will be conducted within 5 years after initiation and at least every 5 years to ensure the remedy is protective of human health and the environment, as long as hazardous substances, pollutants, or contaminants remaining onsite above levels that allow for UU/UE remain. DOE will submit the results of these FYRs in accordance with the requirements of CERCLA, the NCP, and the ORR FFA for the Oak Ridge NPL Site.

1.6 INTERIM RECORD OF DECISION CERTIFICATION CHECKLIST

The following information is included in Part 2 of this MPA IROD:

- COCs and their respective concentrations (Section 2.5).
- Baseline risk represented by the COCs (Section 2.7). Because this is an IROD, a final MPA groundwater baseline risk assessment will need to be performed as part of a final ROD (or RODs) for the MPA, using the additional characterization data proposed to be collected as part of this MPA IROD.
- Target performance treatment levels established for COCs and the basis for the levels (Section 2.8).
- Current and future land and groundwater use assumptions used in the baseline risk assessment and IROD (Section 2.6) and land use restrictions that will remain in place during IROD implementation (Section 2.9).
- Decisive factor(s) that led to selecting the remedy (Section 2.12).

¹Federal SDWA MCLs listed in 40 CFR 141.61(a) and 40 CFR 141.62(b), and Tennessee SDWA MCLs listed in TDEC 0400-45-01-.06 and TDEC 0400-45-01-.25. ²Tennessee groundwater quality criteria listed in TDEC 0400-40-03-.03.

- Estimated capital, O&M, and total present-worth costs; discount rate; number of years over which the remedy cost estimates are projected; and non-discounted, constant-dollar alternative comparison if appropriate (Section 2.12).
- Manner in which any source material constituting principal threat is addressed (Section 2.13).

Additional information regarding ETTP, ORR, and the MPA can be found in the Administrative Record generated and approved by the three FFA parties for this MPA IROD.

DOE/OR/01-2950&D2

Record of Decision for Groundwater in the K-31/K-33 Area at the East Tennessee Technology Park, Oak Ridge, Tennessee

Selected Pages from file - full file on request

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Prepared for the U.S. Department of Energy Office of Environmental Management

United Cleanup Oak Ridge LLC under contract 89303322DEM000067

PREFACE

This *Record of Decision for Groundwater in the K-31/K-33 Area at the East Tennessee Technology Park, Oak Ridge, Tennessee* (K-31/K-33 Area Groundwater Record of Decision [ROD]) has been prepared in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, to document the selected remedy for final environmental remediation of groundwater within the K-31/K-33 Area at the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee. This K-31/K-33 Area Groundwater ROD documents the selected remedy agreed on by the U.S. Department of Energy (DOE), Tennessee Department of Environment and Conservation, and U.S. Environmental Protection Agency and contains the Responsiveness Summary addressing public comments and/or concerns during the Proposed Plan public comment period held from April 26, 2023, until June 12, 2023, including a public meeting on May 9, 2023.

To evaluate and remediate groundwater, DOE divided the ETTP site into three areas: K-31/K-33 Area, Main Plant Area, and Zone 1 (Figure P.1). This K-31/K-33 Area Groundwater ROD addresses groundwater in the K-31/K-33 Area only. Groundwater in the other portions of ETTP will be addressed in separate CERCLA decision documents.

This decision is based on contents of the Administrative Record file for this project and relies on information from the following principal documents supporting this K-31/K-33 Area Groundwater ROD:

- Remedial Investigation/Feasibility Study Report for the K-31/K-33 Area at the East Tennessee Technology Park, Oak Ridge, Tennessee (DOE/OR/01-2893&D2).
- Proposed Plan for the Record of Decision for Groundwater in the K-31/K-33 Area at the East Tennessee Technology Park, Oak Ridge, Tennessee (DOE/OR/01-2922&D2).

These documents and other information of the Administrative Record supporting the decision can be found at the DOE Information Center, at the Office of Scientific and Technical Information, 1 Science.gov Way, Oak Ridge, Tennessee 37830, (865) 241-4780, https://doeic.science.energy.gov/. Operating hours are Monday through Friday, 8:00 a.m. to 6:00 p.m., Eastern Standard Time.

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1.1 SITE NAME AND LOCATION

K-31/K-33 Area at the East Tennessee Technology Park (ETTP) Oak Ridge Reservation (ORR) Oak Ridge, Tennessee Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Information System Identification TN1890090003

1.2 STATEMENT OF BASIS AND PURPOSE

This *Record of Decision for Groundwater in the K-31/K-33 Area at the East Tennessee Technology Park, Oak Ridge, Tennessee* (K-31/K-33 Area Groundwater Record of Decision [ROD]) presents the selected remedy for final environmental remediation of groundwater within the K-31/K-33 Area at ETTP, formerly the K-25 site and the Oak Ridge Gaseous Diffusion Plant (ORGDP), on the U.S. Department of Energy's (DOE's) ORR in Oak Ridge, Tennessee (Figure 1.1). The K-31/K-33 Area is an approximate 200-acre area that was used for uranium enrichment activities between 1951–1985.

Environmental cleanup work at ETTP historically was divided into media-specific decisions and actions. ETTP was divided further into two geographic zones for the purpose of evaluating soils, buried waste, and subsurface structures. Zone 1 was defined as the largely undeveloped area surrounding the uranium enrichment and support facilities that comprise the main processing/industrial area. Portions of Zone 1 were used for waste management activities and process support activities, such as power generation. Zone 2 was defined as the Main Plant Area (MPA) in which uranium enrichment, chemical processing, and related support activities occurred. For the purposes of groundwater evaluation, while Zone 1 is being evaluated as a whole, Zone 2 was geographically split between the K-31/K-33 Area to the west of Poplar Creek and the MPA to the east of Poplar Creek (Figure 1.2). The Zone 2 K-31/K-33 Area groundwater is the subject of this ROD. Groundwater in the MPA of ETTP and groundwater in Zone 1 are being addressed under separate decisions and actions.

DOE has developed the final decision for K-31/K-33 Area groundwater in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (42 United States Code Section 9601 et seq.), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] 300). The *Federal Facility Agreement for the Oak Ridge Reservation* (DOE/OR-1014; ORR Federal Facility Agreement [FFA]) was developed to provide a legal framework for remediation activities on the Oak Ridge National Priorities List site and to coordinate remedial activities under CERCLA and the Resource Conservation and Recovery Act of 1976 (RCRA).

The integrated approach in the ORR FFA extends to preparation of decision documents under CERCLA and RCRA. In accordance with the NCP, 40 CFR 300.5, DOE is the lead federal agency for this action; per CERCLA Section 120(e), 42 United States Code Section 9620(e), the NCP at 40 CFR 300.430(f)(iii), and the ORR FFA, the U.S. Environmental Protection Agency (EPA) and DOE jointly select the remedy. As a party to the ORR FFA, the Tennessee Department of Environment and Conservation (TDEC) provides oversight and approval of remedy selection and implementation. In addition, National Environmental Policy Act of 1969 (NEPA) values are incorporated in the documents prepared for this project in accordance with the *Secretarial Policy Statement on the National Environmental Policy Act of 1969* (DOE 1994). This policy states DOE will rely on the CERCLA process for review of actions taken under CERCLA and will address and incorporate NEPA values to the extent practicable in CERCLA evaluations.



Figure 1.2. CERCLA groundwater areas at ETTP.

The purpose of remediation measures presented in this K-31/K-33 Area Groundwater ROD is to restore groundwater to enable its future beneficial use, consistent with the NCP. Historical groundwater monitoring in the K-31/K-33 Area identified contamination, primarily chromium and nickel, above state and federal drinking water standards in several monitoring wells.

As a result, K-31/K-33 Area groundwater was identified in the list of Oak Ridge Remediation sites in Appendix C of the ORR FFA. EPA's *Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites* (EPA 2015b; Inorganic Monitored Natural Attenuation [MNA] Guidance) was used to select MNA as the remedy. Site conditions at the K-31/K-33 Area do not correspond in full to each line of evidence the guidance recommends be met for remediation via MNA. However, MNA and land use controls (LUCs) were determined, for site-specific reasons, to be an appropriate remedy that is protective of human health and the environment and in compliance with applicable or relevant and appropriate requirements (ARARs). DOE's selection of MNA as the preferred response action for K-31/K-33 Area groundwater is based on the following site-specific factors: biogeochemical reduction, sorption and chemical reduction, advection and dispersion, contamination above drinking water levels occurring sporadically in only a few wells, exceedances generally less than two times the maximum contaminant level (MCL), and overall contaminant concentrations trending downward since monitoring began in the late 1980s.

Soil cleanup actions in the K-31/K-33 Area, completed under the *Record of Decision for Soil, Buried Waste, and Subsurface Structure Actions in Zone 2, East Tennessee Technology Park, Oak Ridge Tennessee* (DOE/OR/01-2161&D2; Zone 2 Soil ROD), were based on protection of future industrial workers consistent with the planned reuse of the site as an industrial and/or commercial development. Because these actions were not intended to allow for unlimited use/unrestricted exposure (UU/UE), LUCs have been implemented under the Zone 2 Soil ROD, including controls to prohibit residential development and prevent groundwater use. Because the selected remedy for K-31/K-33 Area groundwater will require an estimated 15 years to achieve groundwater remediation goals, LUCs restricting groundwater use (which includes extraction, consumption, and exposure) have been incorporated into this K-31/K-33 Area Groundwater ROD. DOE will maintain LUCs until concentrations of hazardous substances in the soil and groundwater are at such levels to allow for UU/UE.

This decision is based on documents contained in the Administrative Record file for the K-31/K-33 Area at ETTP. DOE has considered all comments received during the public review period for the *Proposed Plan for the Record of Decision for Groundwater in the K-31/K-33 Area at the East Tennessee Technology Park, Oak Ridge, Tennessee* (DOE/OR/01-2922&D2; K-31/K-33 Area Proposed Plan) in preparation of this K-31/K-33 Area Groundwater ROD. DOE, EPA, and TDEC (parties to the ORR FFA) concur with the selected remedy. DOE is responsible for maintaining, monitoring, and enforcing such LUCs, including in the case these procedural responsibilities are assigned to another party by contract, property transfer agreement, or through other means. In these instances, DOE shall retain ultimate responsibility for remedy integrity.

1.3 ASSESSMENT OF SITE

Water quality monitoring in 20 of the 21 groundwater wells located across the K-31/K-33 Area (excluding 1 well, UNW-044, that is consistently dry) has identified the presence of chromium and nickel in concentrations above health-based drinking water standards that poses a potential threat to human health if the groundwater was used as a drinking water source. Groundwater beneath the K-31/K-33 Area is not presently or foreseeably used for drinking water or other consumptive purposes. However, under TDEC Rule 0400-40-03-.07(4)(b), groundwater beneath the K-31/K-33 site is classified as general use groundwater and is considered a potential source of drinking water.

Under the NCP at 40 CFR 300.430(a)(1)(iii)(F), EPA expects to return usable groundwaters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site. When groundwater restoration to beneficial uses is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction.

The response action (i.e., selected remedy) described in this K-31/K-33 Area Groundwater ROD is necessary to protect the public health or welfare of the environment from actual or threatened releases of hazardous substances into the environment.

1.4 DESCRIPTION OF SELECTED REMEDY

The selected remedy addresses contamination in K-31/K-33 Area groundwater through MNA, which is a groundwater remediation approach that relies on natural processes, including dispersion, sorption, and chemical transformation, to decrease or attenuate concentrations of contaminants in groundwater. The NCP establishes an expectation that treatment will be used to address principal threats at a site, but contaminated groundwater generally is not considered a principal threat unless it is associated with nonaqueous-phase liquids (NAPLs) or other highly contaminated constituents (e.g., several orders of magnitude greater than acceptable risk levels) (EPA 1991). The concentrations of chromium, nickel, and other constituents in K-31/K-33 Area groundwater have exceeded the MCLs by a factor of less than two times the MCL and there is no NAPL present; therefore, K-31/K-33 Area groundwater contamination does not meet criteria for designation as a principal threat.

The selected remedy, MNA, includes the following major components:

- Monitor, evaluate, and report on activities necessary to effectively track the progress of attenuation processes.
- Collect, analyze (in a laboratory), and evaluate groundwater samples.
- Report monitoring results annually and evaluate data to support an assessment of progress toward groundwater restoration.

MNA will be implemented in accordance with EPA's Inorganic MNA Guidance (EPA 2015b) and protocol until cleanup levels are attained and remedial action objectives are satisfied. The selected remedy includes selection of LUCs to prohibit groundwater use (which includes extraction, consumption, and exposure) without prior written approval from DOE, EPA, and TDEC until groundwater remedial action objectives are met or groundwater concentrations are at such levels to allow for UU/UE.

Following approval of this K-31/K-33 Area Groundwater ROD, a Remedial Action Work Plan (RAWP) will be developed on a timeframe under Appendix E or Appendix J of the ORR FFA. The RAWP will establish the schedule and requirements for monitoring and reporting on remedy performance. It will also establish criteria for evaluating whether the MNA remedy is performing consistent with the Inorganic MNA Guidance. If the remedy is not performing as established in the RAWP, then changes to the selected remedy (e.g., selecting a different alternative or other actions such as in situ treatment) will be evaluated and implemented on a timeframe consistent with the Five-Year Review (FYR) process. Changes to this K-31/K-33 Area Groundwater ROD, including changes to the selected remedy, will be documented through the appropriate CERCLA document(s) in accordance with the NCP at 40 CFR 300.435 and A Guide to *Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (EPA 1999; EPA ROD Guidance).

In addition to this K-31/K-33 Area Groundwater ROD, DOE intends to issue additional RODs for ETTP groundwater. The MPA Interim ROD (IROD) for Groundwater is currently under review by EPA and TDEC. The MPA IROD for Groundwater will support a future, final Groundwater ROD (or RODs) for the MPA of ETTP. DOE is initiating additional investigations in the MPA to start the process to obtain final decisions in the MPA. The Zone 1 Groundwater Plumes ROD will be issued in the future.

ETTP soils in Zone 2 are being addressed under the Zone 2 Soil ROD. Remaining ecology, surface water, and sediment at ETTP (exclusive of Poplar Creek and the Clinch River) will be addressed in the Remaining Ecology/Surface Water/Sediment ROD, which is currently in the remedial investigation (RI)/feasibility study (FS) phase of the CERCLA process.

1.5 STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and uses permanent solutions and alternative treatment technologies to the maximum extent practicable. The remedy does not satisfy the statutory preference for treatment as a principal element of the remedy because the selected remedy, MNA, is not considered treatment. Nonetheless, MNA was selected because it protects human health and the environment and complies with ARARs while providing the best balance of tradeoffs over treatment with respect to implementability, long-term effectiveness, and permanence at a reasonable cost. MNA is expected to reduce toxicity, mobility, and volume through attenuation processes over time with no residual risk at the conclusion of the response action.

Because the selected remedy will result in hazardous substances, pollutants, or contaminants remaining onsite in groundwater above levels that allow for UU/UE, a review will be conducted every 5 years following remedial action initiation to ensure the remedy remains protective of human health and the environment, in accordance with CERCLA Section 121(c) and the NCP at 40 CFR 300.430(f)(4)(ii). The FYRs will continue until the remedial action objectives are achieved.

1.6 RECORD OF DECISION CERTIFICATION CHECKLIST

The following information is included in Part 2 of this ROD:

- Contaminants of concern (COCs) and their respective concentrations (Section 2.7).
- Baseline risk represented by the COCs (Section 2.7).
- Remediation levels established for the COCs and the basis for these levels (Section 2.12.4).
- How source materials constituting principal threats will be addressed (Section 2.11).
- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and the ROD (Section 2.6).
- Potential land and groundwater uses that will be available at the site as a result of the selected remedy (Section 2.12.4).
- Estimated capital, operation and maintenance (O&M), and total present-worth costs; discount rate; and number of years over which the remedy cost estimates are projected (Section 2.12.3).
- Key factor(s) that led to selecting the remedy (Section 2.12.1).

Additional information regarding K-31/K-33 Area groundwater can be found in the Administrative Record generated and approved by the three FFA parties for this K-31/K-33 Area Groundwater ROD.

<u>Oak Ridge Site Specific Advisory Board Wednesday, June 12, 2024, 6:00 p.m.</u>

IV. Public comment period (S. Kimel)

i. Comments on other topics or concerns for DOE or the board – Comments previously received to be read into the record. ii. Comments pertaining to this meeting will continue to be accepted by email to <u>orssab@orem.doe.gov</u> by no later than 5 p.m. EST on Monday, June 17, 2024.

Hello Shelley & Harriett;

I would appreciate you reading this input into the record during the "Public Comment" agenda item at the ORSSAB mtg on June 12th. I have a conflict at 6:00 pm (*Greenways O. R. Committee mtg*) and will be unable to attend. And feel free to forward to the full Board.

---Thanks, Doug

Dear ORSSAB Board

Re: Ms Shelley Kimel (ORSSAB Public Affairs) & Ms Harriett McCurdy (ORSSAB Secretary) 6-12- 2024

The unique natural resource values of the ORR parcel referred to as ED-6 and managed by OREM, have been recognized ever since The DOE identified it as excess to mission needs 25 years ago. I and others believe there are compelling justifications & merits on many levels for preserving its unique greenbelt qualities for the greater economic benefit to the residents of Roane County and Oak Ridge . And furthermore as a clear example of the Community and The DOE commitments, mission, and convictions to combating climate change.

I am asking that the ORSSAB in your Advisory capacity recommend that ED-6 be exempted from development and protected as greenspace.

It is a 350 acre OREM managed parcel in the west end roughly bordered by the fence line from the guard house up to the water tower and extending west 1/2 mile or less, see attached map. Currently there are 5 miles of moderate low impact woodland greenway trails within the area that benefit the more than 3,000 residents in the surrounding residential developments on three sides. County Club Estates, Southwood Estates, Forest Creek Village, Westwood HOA and West Oaks from Oklahoma Ave west.

Visitors to these greenway trails can literally walk from their door and enjoy the peaceful beauty of this oak forested landscape undisturbed for over 80 years. White Oaks, Scarlet Oaks, Tulip Poplar and other hardwoods, many 3' in dia and larger. To damage this priceless natural treasure in the heart of our west end Roane county neighborhoods would be tragic loss to our community. Some of you have visited and walked the trails and can confirm first hand the unique beauty of this old forest.

From those I have been in contact with and see on the ED-6 greenway trails , there is to a person , the sincerest appreciation of this peaceful natural landscape . Much like retail/commercial/residential development has measurable value (\$'s) so to can dollar value and measure be attributed to the redeeming personal experiences visitors gain with preserving such a accessible and unique natural area. Think quality of life and property value as starters.

Some contend that ED-6 is necessary for development needs to support population growth and economic expansion. This contention is not supported by a closer look at the facts to the contrary. In recent years and continuing there has been a growing emphasis on residential and commercial development within the core of town. Right now there are over 2,000 approved & proposed residential units (apartments & single family, in the \$900/month rental to \$800k detached homes) within an average 2 miles from the Municipal Bldg. Currently about 20% developed. And vacant/blighted parcels to accommodate even more. In short brownfield land with full infrastructure that can accommodate growth projections for years to come.

As for meeting commercial/retail growth I don't need to be pointing out there are numerous vacant and blighted strip centers along or near the Turnpike & S. Illinois Ave. . For example there are new storefronts built in the last 5 years yet to be occupied and other locations still unbuilt awaiting demand.

Smart growth is growth concentrated near public services not "leap frog" development. A term used by Dr James Spencer and Mr Phil Enquist when they were advising O. R. on urban growth back in 2018. Both are well recognized urban planners. Dr Spencer taught urban planning at Univ of TN for over 40 years and Mr Enquist is a partner in the Chicago office of Skidmore, Owings & Merrill in charge of Urban Design & Planning. He is a Fellow of the American Institute of Architects.

Some have suggested ED-6 as a site for a new elementary school. The current four elementary schools are located close to where families live. With population growth in the core of the city, any expansion or new school location should reflect that, not "leap frog" to the far west end. Think busing costs and even more importantly the quality of life for the kids, i.e. up 15 to 20 minutes earlier to catch a bus to the far west end. One of the selling attributes mentioned in realty ads for homes/apartments is close proximity to schools.

By the end of June 2024 the City of Oak Ridge Planning & Development department will be contracting with a urban planning consultant to compile a long overdue C of OR Comprehensive Plan. Expectations are it will be completed within 18 months. With the countless number of 5-10 acre and even 30 acre parcels of vacant & blighted brownfield throughout the core of Oak Ridge it is difficult to believe a urban planning report compiled by experienced professionals will recommend "leap frog" greenfield development. In closing I am asking, as an OREM Advisory Board please recommend the future of ED-6 be preserved as greenspace. Why not this, why not us, why not now?

---Respectfully submitted to the ORSSAB by -- Doug Colclasure - June 10th 2024

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