

AVX - Myrtle Beach Site

April 15, 2021

- ✓ To avoid echoing or feedback, all lines are muted.
- ✓ At the end of the presentation, we will unmute and call upon those who signed up to speak.
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Access Code: **739 909 9#**



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South Carolina Department of Health and Environmental Control

AVX – Myrtle Beach Site Operable Unit 1

Proposed Plan Public Meeting
Carol L. Crooks, Project Manager

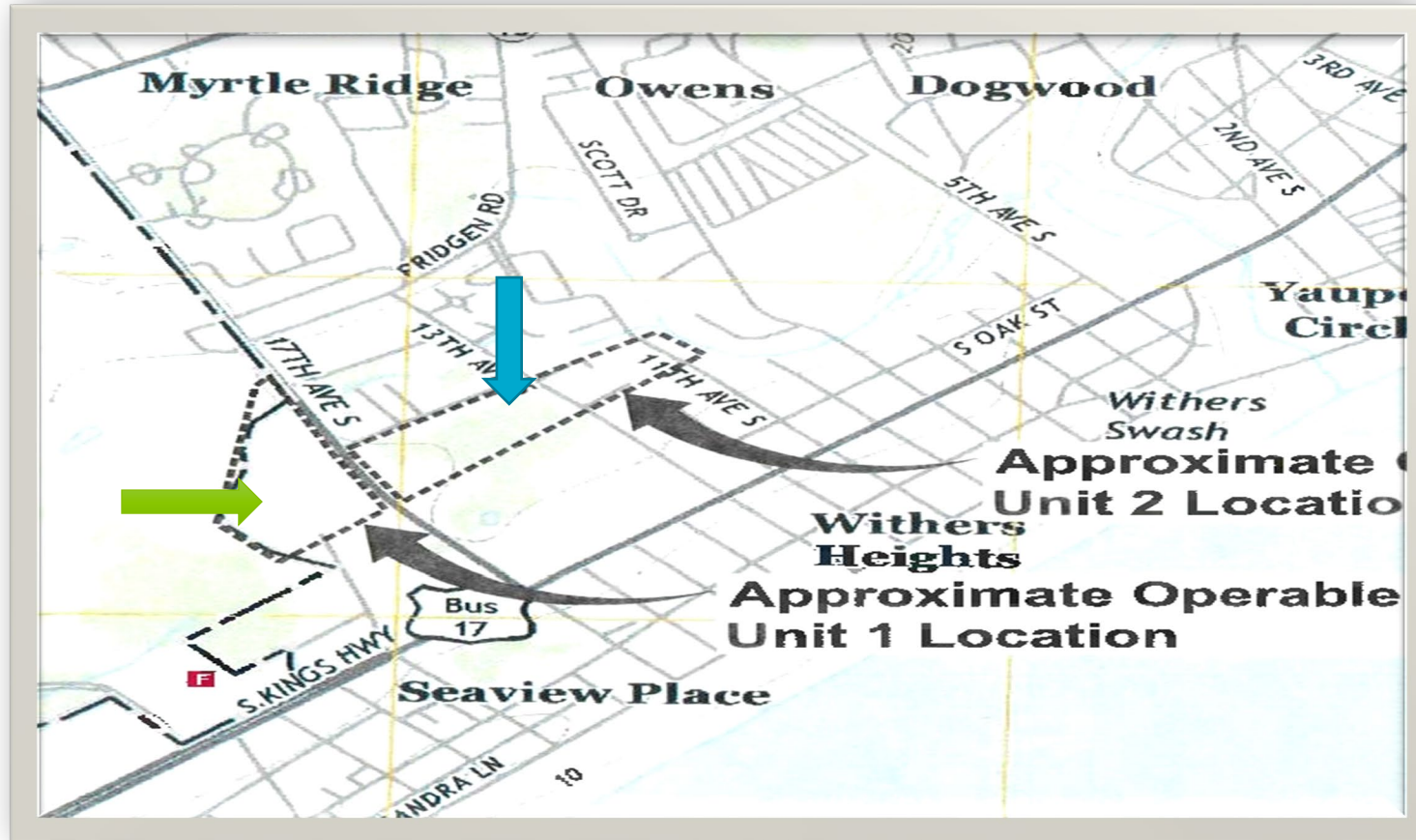
Proposed Plan Public Meeting Operable Unit 1

- Introduction
- Site History
- Feasibility Study/Remedial Action Objectives
- Remedial Alternatives Discussion/Preferred Remedy
- Comments and Questions

Site History - Older

- AVX began operations at the Myrtle Beach location in 1953
- Used chlorinated solvents in manufacturing of ceramic capacitors until 1993
- In 1981 AVX began assessment and remediation of contaminated soil and groundwater without the Department's knowledge
- June 1995 AVX notified DHEC of contamination
- DHEC issued a Consent Order in 1996
- A number of soil and groundwater samples have been collected on the facility property in the Remedial Investigation process

Locations of OU-1 and OU-2



Site History – More Recent

OU-2 Off-Property Groundwater

- August 2006 off-property groundwater contamination was discovered
- DHEC required an investigation to determine the full extent of the contamination beyond the facility property
- Groundwater, surface water and soil gas samples were collected defining the extent of off-site contamination
- 2010 the Site was divided into OU-1 and OU-2 to expedite the process of remediation off-property.
- A Proposed Plan for OU-2 was completed in 2011 and a Record of Decision in 2012
- The groundwater treatment remedy for OU-2 has been implemented and is progressing successfully

Site History – Most Recent OU-1 Facility Property

- Since 2010, a number of buildings have been removed from the facility property
- Soil sampling was conducted during building demo and limited soil removal was completed when needed
- Groundwater extraction wells have continued to control groundwater migration from the facility property
- In 2016 a Feasibility Investigation was completed to fill data gaps
- In 2019 a Feasibility Report was completed to evaluate potential clean-up alternatives

Facility 2010

Buildings not yet removed.



Facility 2020

Most buildings
have been removed



Feasibility Investigation of OU-1

- A comprehensive Investigation was conducted to fill any data gaps that existed within OU-1
- The demolition of multiple buildings in 2014 and 2015 provided access to conduct sampling in areas previously inaccessible
- Included characterization of source areas and testing to evaluate potential treatment options
- This detailed investigation provided a clear understanding of viable options for remediation of soil and groundwater

Feasibility Study (FS)

- The Feasibility Study provides:
 1. Remedial Action Objectives (RAOs) for Constituents of Concern (COCs)
 2. Remedial Alternatives Screening

Constituents of Concern (COCs)

- All COCs are volatile organic compounds (VOCs)
- The primary COC is trichloroethene (TCE) and the breakdown products associated with this chemical

Remedial Action Objectives (RAOs) for the Development and Evaluation of Alternatives

- Eliminate site-related COCs from soils that may be leaching into groundwater
- Restore the groundwater aquifer by reducing the COCs to below Federal Maximum Contaminant Levels (MCLs) for drinking water
- Prevent the ingestion and dermal contact with groundwater containing COCs above MCLs and minimize the potential for COCs to migrate offsite.



Summary of Soil and Groundwater Clean-up Alternatives

Alternative	Description
1. No Action	<ul style="list-style-type: none"> •Required by the National Contingency Plan •No action for source area soils or groundwater •No monitoring or land use controls; Net present value costs: \$0
2. Excavation and Enhanced Reductive Dechlorination (ERD)	<ul style="list-style-type: none"> •Physical removal of source area soils and off-site disposal •Injection of an organic substance to stimulate the natural degradation of COCs in groundwater •Monitored natural attenuation (MNA) and institutional controls •Expected duration is 15 years (5 active and 10 monitoring); Net present value cost : \$5,009,611
3. Excavation and Pump and Treat of Groundwater	<ul style="list-style-type: none"> •Physical removal of source area soils and off-site disposal •Use of groundwater extraction and treatment •MNA and institutional controls •Expected duration is 30 years active and monitoring; Net present cost : \$2,777,047
4. Excavation and Groundwater Recirculation	<ul style="list-style-type: none"> •Physical removal of source area soils and off-site disposal •Groundwater extraction and treatment with reinjection of treated water into the subsurface •MNA and institutional controls •Expected duration is 30 years (20 active and 10 monitoring); Net present value cost: \$4,640,170
5. In-Situ Thermal Treatment and Enhanced Reductive Dechlorination (ERD)	<ul style="list-style-type: none"> •Destruction of COCs in the source area (soils and groundwater) using thermal heating •Treatment of COCs in the downgradient groundwater plume by the use of ERD •MNA and institutional controls •Expected duration is 15 years (5 active and 10 monitoring); Net present value cost: \$13,197,583
6. In-Situ Thermal Treatment and Groundwater Recirculation	<ul style="list-style-type: none"> •Destruction of COCs in the source area (soils and groundwater) using thermal heating •Treatment of the downgradient plume by groundwater extraction, treatment and reinjection MNA and institutional controls •Expected duration is 30 years (20 active and 10 monitoring); Net present value cost: \$13,841,112

Proposed Plan

- Document used to involve the public in the remedy selection process
- Presents DHEC's recommended remedy
- Presents alternatives that were evaluated, and explains the reasons for the Preferred Alternative
- The Proposed Plan may be found on the DHEC website at:
www.scdhec.gov/AVX
- After all public comments have been considered, the Department will issue the Record of Decision for this site.

Evaluation Criteria

- **Threshold Criteria:**

- Overall Protection of Human Health and the Environment
- Compliance with State and Federal Regulations

- **Balancing Criteria:**

- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume Through Treatment
- Short-Term Effectiveness
- Implementability
- Cost

- **Modifying Criteria:**

- Community Acceptance

Overall Protection of Human Health and the Environment

- Alternative 1 (No Action) offers no protection to human health and the environment.
- Alternatives 2 through 6 would be protective of human health and the environment.

Compliance with State and Federal Regulations

- All Alternatives **Except Alternative 1** would comply with State and Federal Regulations
- All appropriate permits for Alternatives 2 through 6 could be obtained during the design phase of the remedy

Long-Term Effectiveness

- This factor considers the ability of an alternative to maintain protection of human health and the environment over time
- Alternative 1 would not be effective or permanent
- Alternatives 2 through 6 would all be highly effective and permanent in the removal of source area soils
- Alternatives 2 and 5 would likely achieve RAOs for groundwater in significantly less time than 3,4, and 6

Reduction of Mobility, Toxicity, or Volume Through Treatment

- This factor evaluates an alternative's use of treatment to reduce the harmful effects of contaminants.
- Alternative 1 provides no treatment to reduce contaminants and no monitoring to determine if natural attenuation is occurring.
- All alternatives (2-6) would work well to reduce the mass of contamination in soil.
- Alternatives 2 and 5, using ERD, would reduce mobility, toxicity, and volume of COCs in groundwater in a relatively short time compared to Alternatives 3, 4, and 6.

Short-Term Effectiveness

- Short-term effectiveness addresses potential human health and environmental risks associated with the alternative during the construction and implementation phase
- Alternative 1 would involve no activities and therefore no construction or short-term exposure risks to human health or the environment
- All other active remedies could present minimal short-term risk
- However, Alternatives 2, 3, and 5 have previously been implemented within OU-1 or OU-2 with no harm to human health or the environment

Implementability

- The analysis of implementability considers the technical and administrative feasibility of remedy implementation and the availability of required materials and services
- Alternative 1 can easily be implemented because there are no technical or administrative components requiring action
- Alternatives 2, 3, and 4 are all technically and administratively feasible. ERD and pump and treat systems have already been utilized at this site
- Alternatives 5 and 6, using thermal treatment systems, have been effective at other sites in the state but have not been used at this site

Cost

- The cost analysis evaluated capital costs and annual operation and maintenance costs (O&M). The total present value cost is the sum of initial capital cost and O&M costs over the lifespan of the remedy
- Alternative 1: \$0
- Alternative 2: \$5,009,611
- Alternative 3: \$2,777,047
- Alternative 4: \$4,640,170
- Alternative 5: \$13,197,583
- Alternative 6: \$13,841,112

Preferred Remedy- Alternative 2 Excavation and Enhanced Reductive Dechlorination (ERD)

- Physical removal of source area soils containing COCs and off-site disposal
- Injection of an organic substance to stimulate the natural degradation of COCs in groundwater known as ERD
- Monitored natural attenuation (MNA)
- Institutional controls
- Expected duration is 5 years active and 10 years monitoring
- Cost: \$5,009,611



How to Comment

Submit comments by mail or email through

May 15, 2021 to:

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DHEC/BLWM

2600 Bull Street

Columbia, SC 29201

crookscl@dhec.sc.gov

Administrative Record is located at the Horry County Memorial Library – Socastee Branch

<https://scdhec.gov/AVX>



DHEC Contacts

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<https://scdhec.gov/AVX>

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April 15, 2021



Raise hand to be called on to share a question or comment



Unmute to speak when called on

*6

Unmute to speak by phone when called on