Robins Air Force Base Environmental Advisory Board (EAB) Fact Sheet

Volume 15, Issue 2, August 2022

The Robins AFB EAB

Recognizing the importance of public involvement in environmental matters, Robins Air Force Base (Robins AFB or Base) has established the Environmental Advisory Board (EAB). The mission of the EAB is to encourage participation of surrounding communities in the Base's environmental programs and allow community members and other stakeholders to have meaningful dialog with Base officials. Specifically, the EAB serves to promote community awareness and obtain constructive community review, comment, and input on current and proposed actions associated with environmental programs at Robins AFB. The EAB supports the Air Force environmental mission of sustaining readiness, being a good neighbor, protecting human health and the environment for the Base and community, and making smart business decisions.

Inside this issue…

August 2022 EAB Meeting

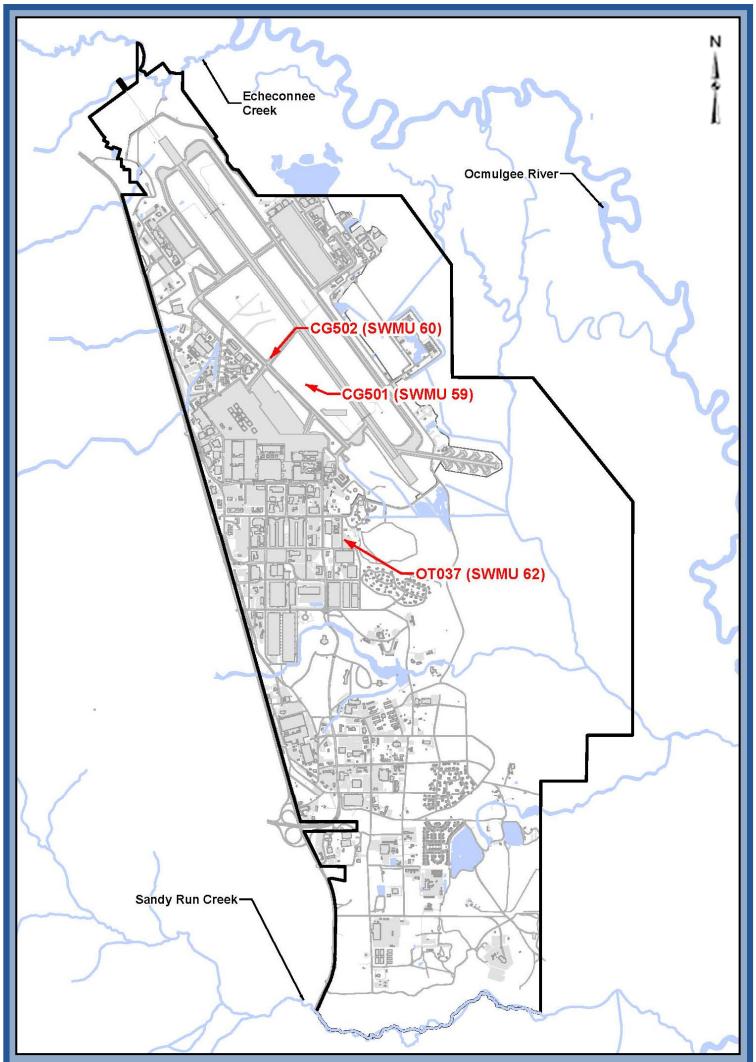
The summer EAB meeting was held on Thursday, August 4, 2022. The topics briefed included: "Solid Waste Management Units (SWMUs) 59 and 60 (CG501 and CG502) - Update on Progress" and "SWMU 62 (OT037) - Update on Progress."

This *Fact Sheet* provides a summary of the information and topics discussed during the meeting.

The next meeting will be held on Thursday, November 3, 2022.

UPDATES ON PROGRESS AT SELECT RESTORATION SITES

At the recent EAB meeting, **Dr. Kip Gray** of Geosyntec Consultants, Inc. (Geosyntec) and **Ms. Elizabeth Rhine** of Bhate Environmental Associates, Inc. (Bhate) briefed on the status of the cleanup efforts at select restoration sites covered under the Optimized Remediation Contract (ORC). Specifically, the sites discussed during the meeting included: (i) SWMUs 59 and 60 (CG501 and CG502); and (ii) SWMU 62 (OT037). The status of each site is presented in this Fact Sheet.



During the recent EAB meeting, updates on the cleanup efforts at SWMUs 59/60 and SWMU 62 were provided.

UPDATES ON PROGRESS AT SELECT (CONTINUED...)

SWMUs 59 and 60

SWMUs 59 and 60 are fuel release sites located along the flightline, which were identified in 1995; no evidence of ongoing leaks have been identified. The current remedial system includes: (i) vertical and horizonal biosparge wells; and (ii) in-situ submerged oxygen curtains (iSOC®). Both the biosparge wells and iSOC® wells are designed to add oxygen to the subsurface to enhance natural degradation of the subsurface contaminants. Both technologies have been effective within their zone of influence.

Site investigations have been conducted in recent years to refine the conceptual site model (CSM). These site investigations identified residual light non-aqueous phase liquid (LNAPL) beneath the taxiway near active and inactive pipelines outside the zone of influence of the current remedial system. The residual LNAPL is generally located below the water table. The LNAPL appears immobile and non-recoverable and is acting as an ongoing source contributing to the downgradient groundwater plume.

HDD Installation at SWMU 59 in 2012.

As such, a Corrective Action Plan (CAP) Addendum was prepared by Geosyntec to expand the biosparge system at both sites with a total of four horizontal directional drilled (HDD) biosparge wells (two at each site) and eight vertical biosparge wells at each site. The CAP Addendum was approved by the Georgia Environmental Protection Division (GA EPD) in October 2021.

Geosyntec prepared a Remedial Design/Remedial Action (RD/RA) Work Plan to detail the design of the expanded system, which is under review by GA EPD. The path forward includes construction of the system, which is tentatively scheduled to begin in the first half of 2023, pending RD/RA Work Plan approval and subcontractor availability.

SWMU 62

SWMU 62 is primarily a chlorinated ethene [largely tetrachloroethene (PCE) and trichloroethene (TCE)] and carbon tetrachloride (CT) groundwater plume that was originally identified in 1999. The source of the plume was initially thought to be associated with a 48-inch storm sewer outfall (i.e., the Third Street outfall), although testing has not confirmed the source as the sewer. The original remedy for the site included a groundwater extraction system.

Under the Performance-Based Remediation (PBR) contract, the groundwater extraction system was shut down, and an in-situ chemical oxidation (ISCO) remedy using potassium permanganate ($KMnO_4$) was implemented. Injections occurred in May 2013, October 2016, and February 2017. Decreases in groundwater contaminant concentrations were observed following the injection event. However, over time, groundwater contaminant concentrations have increased.

Under the ORC, the performance objective is to achieve Remediation Levels (RLs) by the end of the contract (i.e., September 2027). To meet this goal, Bhate is proposing an optimized remedy consisting of injections of Modified Fenton's Reagent (MFR), which is a different type of ISCO remedy. Prior to finalizing the design for the injection program, Bhate conducted a data gap investigation to refine the current plume extent using groundwater data from temporary monitoring wells.

(Continued on page 4)

EAB TRANSITIONS

At the August EAB meeting, **Dr. Linda Smyth** was re-elected to serve as the Community Co-chair for a three-year term. She has been active on the Board since 2004.

Dr. Smyth is a retired Associate Professor, who served as the Vice President for University Advancement at Fort Valley State University (FVSU) and as Executive Director of the FVSU Foundation for more than a decade.

She has been an active leader in several state, regional, and community organizations. She previously served as Chair of the Middle Georgia Clean Cities Coalition, Georgia Entomology Council, and Macon Arts Alliance, President of the Central GA Mercedes Club, and as Treasurer of Central Georgia Cares. She is Secretary Emeritus of the Macon Charter Academy and Historian of the Ocmulgee Porsche Club.

Dr. Linda Smyth was re-elected as the Community Co-Chair at the August 2022 EAB Meeting.

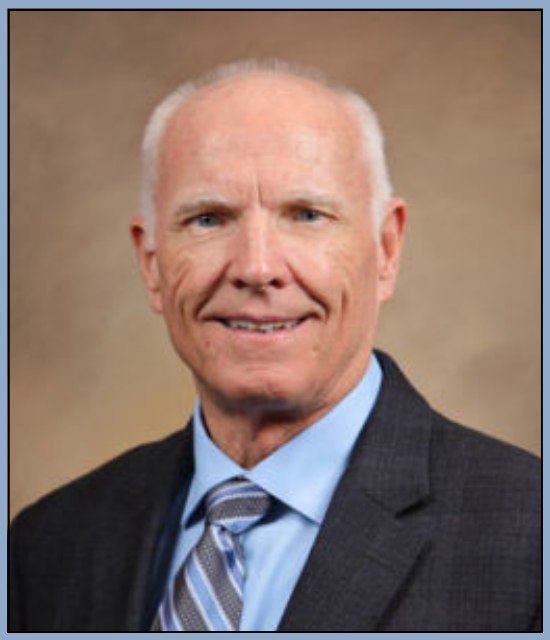
Also at the August EAB meeting, EAB community members approved the appointment of Dr. Richard Mines to the Board. Dr. Mines earned his bachelor's degree in civil engineering from the Virginia Military Institute, master's degree in civil engineering from the University of Virginia, and Ph.D. in civil engineering from Virginia Tech. He is an Emeritus Professor from Mercer University, specializing in environmental engineering with a focus on water and wastewater treatment.

During his career, Dr. Mines also spent approximately 7 years in the consulting industry. He is a registered Professional Engineer. In 2022, he was awarded the Georgia Society of Professional Engineers, Engineer of the Year award.

Dr. Mines is the author of two textbooks, *Introduction to Environmental Engineering* published by Pearson and *Environmental Engineering: Principles and Practice* published by Wiley, and he has published 94 refereed publications and proceedings, 20 other publications and reports, and made 63 presentations. He is also a member of multiple professional organizations

He is also a single engine land private pilot, a certified scuba diver, and an avid athlete, including completing 56 marathons in 25 states.

Dr. Mines and his wife, Beth, have two children: Andrew and Daniel. They are members of Martha Bowman Memorial United Methodist Church and are active in the Francis Asbury Sunday School.



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UPDATES ON PROGRESS AT SELECT (CONTINUED...) RESTORATION SITES

(Continued from page 2)

Bhate also evaluated various types of oxidants for the optimized remedy. It is noted that permanganate has the lowest oxidation potential, while the hydroxyl radical used in MFR has the highest potential; however, permanganate is easier to manage in the field so it is commonly used; the hydroxyl radical has to be created in the field. MFR is a higher concentration (i.e., 10 to 12 percent) hydrogen peroxide mixed with a chelated iron catalyst under a neutral pH.

The oxidant will desorb the contaminant from the soil into the aqueous phase and subsequently treat the dissolved phase concentrations. The reaction also generates superoxide anions (a reductant) that will treat the carbon tetrachloride, which cannot be oxidized.

The preliminary path forward for the site includes multiple injections on a grid pattern, first targeting areas where concentrations are greater than 25 micrograms per liter (µg/L).

Bhate is currently preparing a CAP Addendum and RD/RA Work Plan for Government and Regulatory approval.

Drilling at SWMU 62.

For more information regarding the EAB, please contact
Mr. Fred Otto, Robins AFB EAB Manager, at (478) 327-9272
or visit http://www.robinseab.org

Acronyms

AFB	Air Force Base
Bhate	Bhate Environmental Associates, Inc.
CAP	Corrective Action Plan
CT	Carbon Tetrachloride
CSM	Conceptual Site Model
EAB	Environmental Advisory Board
FVSU	Fort Valley State University
GA EPD	Georgia Environmental Protection Division
Geosyntec	Geosyntec Consultants, Inc.
HDD	Horizontal Directional Drilled
ISCO	In-Situ Chemical Oxidation
iSOC®	In-Situ Submerged Oxygen Curtain
$KMnO_4$	Potassium Permanganate
LNAPL	Light Non-Aqueous Phase Liquid
MFR	Modified Fenton's Reagent
ORC	Optimized Remediation Contract
PBR	Performance Based Remediation
PCE	Tetrachloroethene
RD/RA	Remedial Design/Remedial Action
RL	Remediation Level
SWMU	Solid Waste Management Unit
TCE	Trichloroethene
µg/L	micrograms per liter

Environmental Advisory Board Members

Ms. Shan Williams, **Robins AFB** Installation Co-Chair	**Mayor Lawrence Collins,** **Byron** Community Member	**Dr. Clarence Riley,** **Warner Robins** Community Member
Dr. Linda Smyth, **Macon** Community Co-Chair	**Mr. James Harden,** **Warner Robins** Community Member	**Dr. Brian E. Rood,** **Macon** Community Member
Mr. Craig Benedikt, **US EPA Region 4** Superfund Division	**Mayor John Harley,** **Centerville** Community Member	
Mr. Jim Ashworth **GA EPD** Hazardous Waste Management	**Mr. Stephen Johnson,** **Macon** Community Member	
Ms. Tiffany Bowen, **Warner Robins** Community Member	**Mr. Mike Maffeo,** **Macon** Community Member	