



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



Volume 15, Issue 3, November 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.

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## November 2022 EAB Meeting

The fall EAB meeting was held on Thursday, November 3, 2022.

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

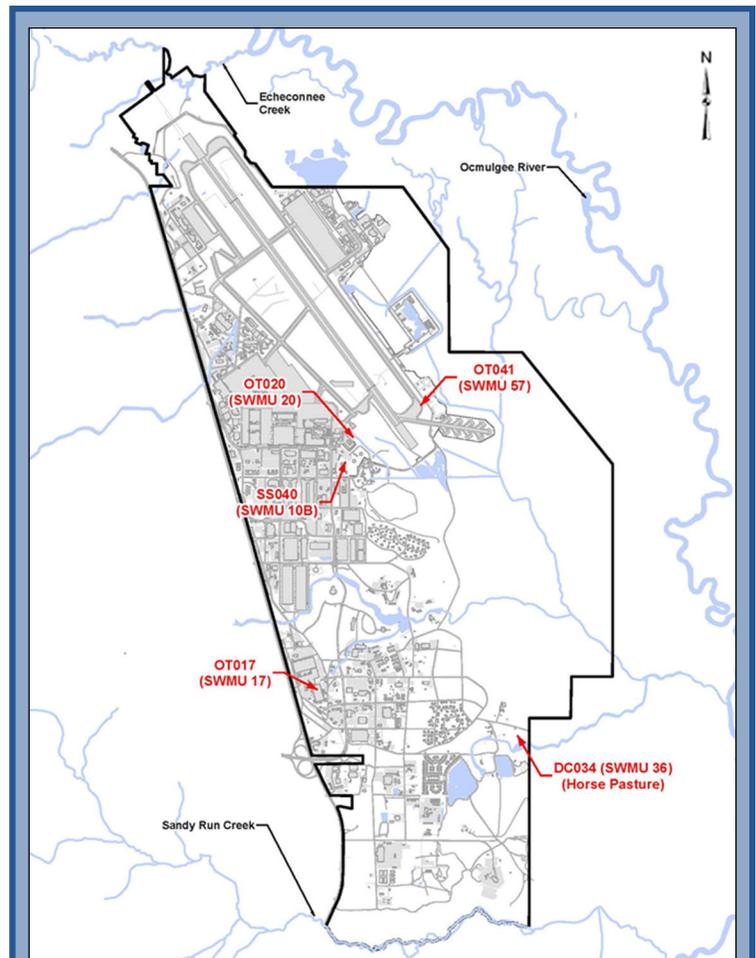
**The next meeting will be held on Thursday, February 2, 2023.**

## Complex Sites: The Role of High Resolution Site Characterization (HRSC)

At the fall EAB meeting, **Ms. Tamara Hebler** of Geosyntec Consultants, Inc., along with **Mr. John Sohl** and **Mr. Scott Pieper** of Columbia Technologies, discussed and demonstrated the use of direct sensing profiling tools being used at Robins AFB to conduct site investigations.

Under the Robins AFB Optimized Remediation Contract (ORC) there are five sites classified as Alternative Objective (AO) sites. These are sites that are generally con-

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HRSC investigations are being conducted at the five AO sites under the Robins AFB ORC.

## Complex Sites: The Role of HRSC (Continued...)

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sidered to have an incomplete conceptual site model (CSM) and are expected to require longer than 30 years to achieve Response Complete under the current remedial approach. The performance objective under the ORC for these AO sites is to revise the CSM through supplemental site investigations using HRSC techniques and to subsequently evaluate the current remedy for suggested optimization or alternatives.

The tools being used for these investigations at Robins AFB generally include the optical interface probe (OIP), membrane interface probe (MIP), and the hydraulic profiling tool (HPT), as described subsequently. Each of these tools collects data near continuously in the subsurface.

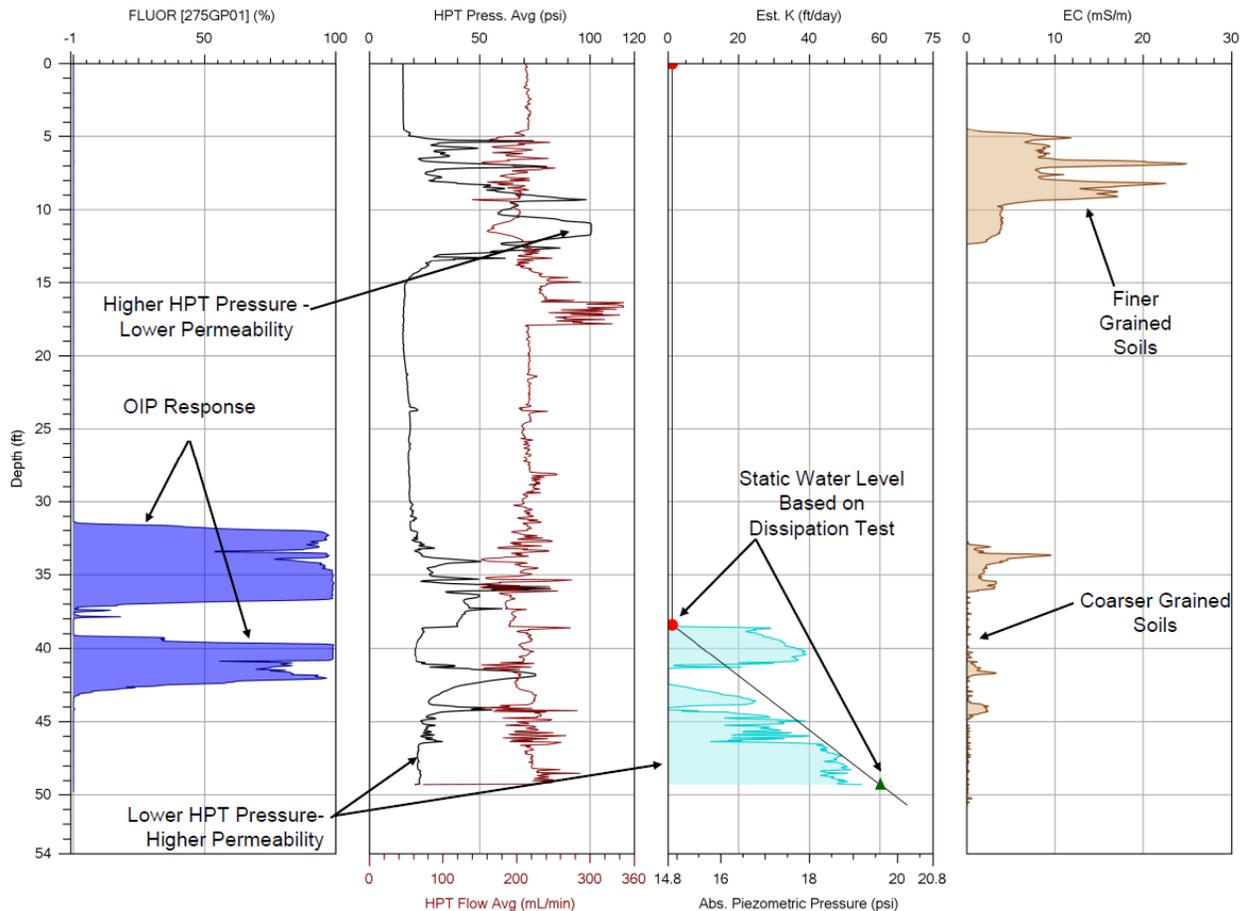
**OIP:** The OIP system uses a high-energy Light Emitting Diode (LED) to produce an ultraviolet

(UV) light source for the detection of polycyclic aromatic hydrocarbons (PAHs). Residual phase PAHs present in the soil matrix will absorb and then release photon energy in the form of fluorescence. This fluorescence is captured via a UV camera in the probe. Individual OIP logs consist of a primary graph of fluorescence as a % of the optical image recorded by the UV camera over depth. Fluorescence response is normally indicative of residual phase petroleum hydrocarbons.

**MIP:** The MIP is typically deployed with three gas chromatograph detectors, including a photo ionization detector (PID), a flame ionization detector (FID), and a halogen specific detector (XSD™).

- ◆ The MIP-PID responds to a wide range of volatile aromatic compounds, including benzene,

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Example Columbia Technologies log showing OIP, HPT, Estimated Hydraulic Conductivity, and Electrical Conductivity Responses

## Complex Sites: The Role of HRSC (Continued...)

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toluene, ethylbenzene, and xylenes (BTEX), as well as chlorinated ethenes such as trichloroethene (TCE). The PID also responds well to chlorobenzene and dichlorobenzenes.

- ◆ The FID is a general detector useful for detecting petroleum hydrocarbons (straight and branched chain alkanes), including methane and butane, as well as for confirmation of high concentrations of compounds seen on the PID and XSD.
- ◆ The XSD detects a broad spectrum of chlorinated VOCs, including TCE and its degradation products. The XSD provides high halogen selectivity, making it an effective tool for identification and measurement of halogenated com-

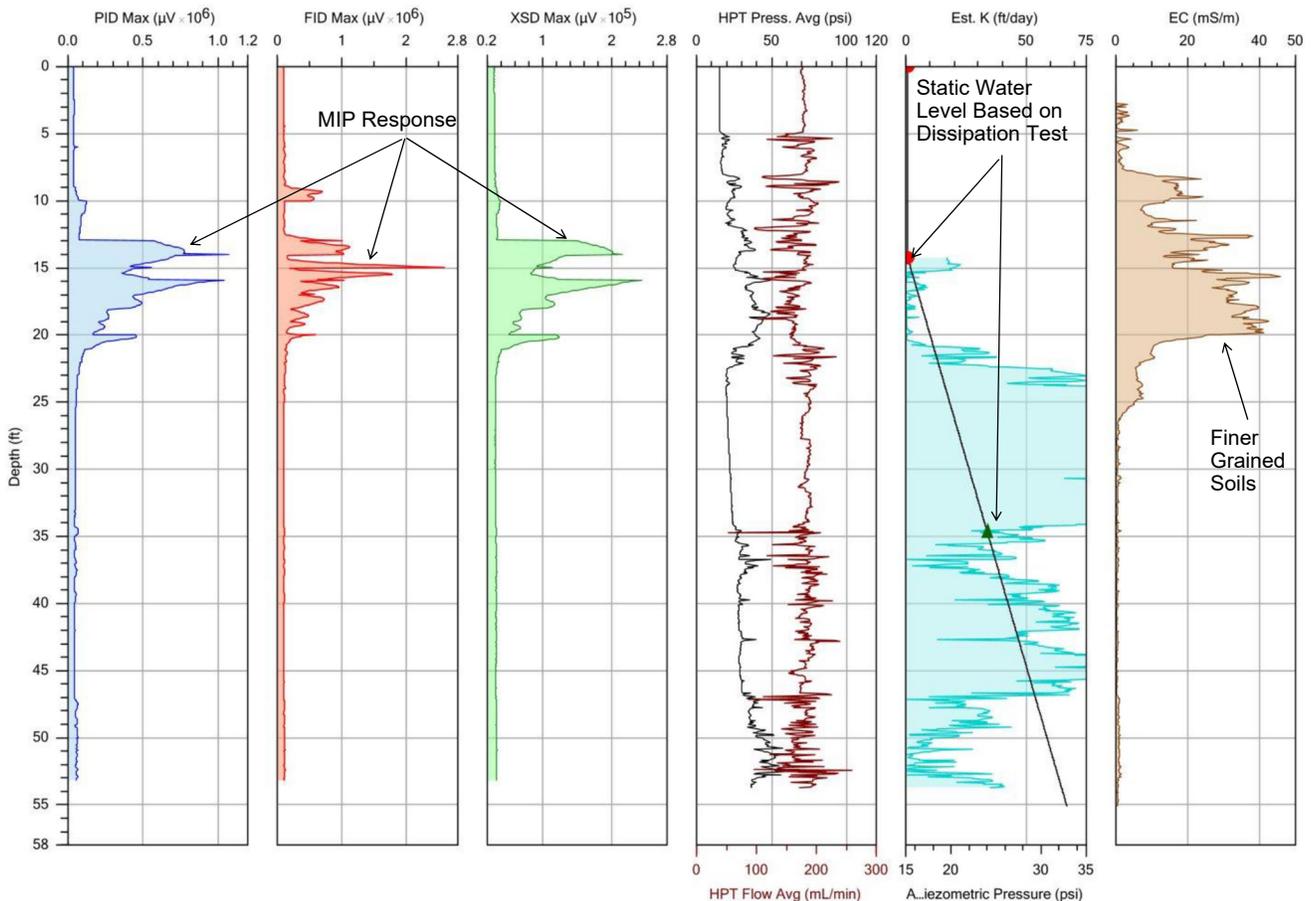


Mr. Sohl Showing the MIP Probe to the EAB Members

pounds in environments where other contaminants, such as hydrocarbons, are present.

**HPT:** The HPT is used to measure and log relative hydraulic permeability. The HPT pressure logs record measured changes in hydraulic pressure directly as water is pumped into the formation at a

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Example Columbia Technologies Log Showing PID, FID, XSD, HPT, Estimated Hydraulic Conductivity, and Electrical Conductivity Responses

## Complex Sites: The Role of HRSC (Continued...)

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constant rate. These logs reveal the variability and relative hydraulic conductivity of the soil. The HPT can be deployed simultaneously with the OIP and MIP.

Electrical conductivity can also be measured as these tools are pushed over depth. In general, at a given location, lower conductivity values are characteristic of larger particles such as cobbles and sands, while higher conductivities are characteristic of finer sized particles such as finer sand, silts, and clays.

These tools each provide qualitative data. Discrete soil and groundwater sampling is subsequently conducted to obtain quantitative data.



Mr. Pieper Demonstrating Columbia's HRSC Equipment

### Acronyms

AFB	Air Force Base
AO	Alternate Objective
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CSM	Conceptual Site Model
EAB	Environmental Advisory Board
FID	Flame Ionization Detector
ft/day	feet per day
HPT	Hydraulic Profiling Tool
HRSC	High Resolution Site Characterization
LED	Light Emitting Diode
MIP	Membrane Interface Probe
mL/min	milliliter per minute
mS/m	milli siemens per meter
OIP	Optical Interface Probe
ORC	Optimized Remediation Contract
PAH	Polycyclic Aromatic Hydrocarbon
PID	Photo Ionization Detector
psi	pounds per square inch
SWMU	Solid Waste Management Unit
TCE	Trichloroethene
UV	Ultraviolet
XSD	Halogen Specific Detector

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>

### Environmental Advisory Board Members

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