

Marine Corps Base (MCB) Camp Lejeune Restoration Advisory Board (RAB) Meeting Minutes

MEETING DATE: April 15, 2026

LOCATION: Coastal Carolina Community College, Business Technology Building, Jacksonville, North Carolina

ATTENDEES: Thomas Richard/MCB Camp Lejeune Matt Louth/CH2M
Laura Spung/MCB Camp Lejeune Kristin Brickman/CH2M
Laura Bader/RAB Co-chair Keith LaTorre/CH2M
David Towler/MCB Camp Lejeune Ben Francisco/NAVFAC
Jennifer Tufts/EPA (virtual)
Josh Hanks/NCDEQ (virtual)

FROM: Matt Louth/CH2M

DATE: May 12, 2026

I. Welcome and Introductions

Mr. Richard began the meeting, introduced the team, and explained the purpose of the RAB.

II. Sixth Five-Year Review

Objective: The purpose of this agenda item is to present the purpose of the Five-Year Review, review the sixth Five-Year Review Sites, present the Five-Year Review Process, and discuss the Sixth Five-Year Review Protectiveness Determinations.

Overview: A presentation was reviewed by Ms. Brickman.

A five-year review is required under CERCLA for sites where contaminants exist at levels that would not allow for unlimited use and unrestricted exposure, and a Record of Decision (ROD) is in place. The purpose of the five-year review is to evaluate implementation and performance of remedies in-place and to determine protection of human health and the environment at evaluated sites. The Five-Year Reviews occur five years from the initiation of the first remedial action and no later than five years from the signature date of the previous review. At MCB Camp Lejeune, the first ROD (OU2) was signed in September 1993. Five Year Reviews have been conducted every five years since: 1999, 2005, 2010, 2015, 2020, and 2025.

This Sixth (2025) Five-Year Review included 23 Operable Units with 33 sites:

- OU 1 (Site 21, 24, and 78)
- OU 2 (Site 6, 9, 82, and UXO-22)
- OU 4 (Site 41 and 74)
- OU 5 (Site 2)
- OU 6 (Site 36, 43, 44, and 54)
- OU 7 (Site 28)
- OU 8 (Site 16)

- OU 10 (Site 35)
- OU 11 (Site 80)
- OU 12 (Site 3)
- OU 13 (Site 63)
- OU 14 (Site 69)
- OU 15 (Site 88)
- OU 16 (Site 89 and 93)
- OU 19 (Site 84)
- OU 20 (Site 86)
- OU 21 (Site 73)
- OU 22 (Site 96)
- OU 23 (Site 49)
- OU 24 (Site UXO-06)
- OU 25 (Site UXO-19)
- OU 26 (Site UXO-24)
- OU 33 (Site UXO-30)

To determine protectiveness, three questions are asked:

- A. Is the remedy functioning as needed?
- B. Are RAOs, ARARs, Risk Assessment Methods still valid?
- C. Is there any other information that could question the protectiveness?

Site visits and inspections were conducted at the site along with review of data and documents such as RODs, previous Five-Year Reviews, monitoring data, LTM reports, LUC inspections, pilot studies, and other investigations. Reviewing data trends (COC concentration) and analyzing plume stability was conducted for sites to determine if the remedy is functioning as needed.

To understand if RAOs, ARARs, and Risk Assessment Methods are still valid, changes in Federal or State standards, toxicity data, exposure assumptions, and risk assessment methods were assessed for the sites under review.

After working through these questions, protectiveness was determined for the sites. Possible protectiveness determinations are: Protective; Protective in the Short-Term; Will Be Protective; Deferred; and Not Protective. The Sixth Five-Year Review concluded that the 33 sites fell into three categories: Protective, Will Be Protective, and Deferred.

Twenty-three sites within 15 OUs were determined as Protective. This determination means the remedy is functioning as intended; human and ecological risks are currently under control and are anticipated to be under control in the future. OUs determined to be Protective are: 4, 5, 8, 10, 11, 12, 13, 14, 15, 19, 22, 23, 24, 25, and 26

One OU was determined as Will Be Protective. This determination means human and ecological exposures are under control, but the remedy has not been fully implemented. OU 33 which contains Site UXO-30, was determined as Will Be Protective. The ROD was signed in February 2025 and the Remedial Design and Action (LUCs) were in progress at the time of the Five-Year Review. The Remedy is expected to be protective once LUCs are fully in place.

Seven OUs were determined as Deferred. This determination is generally used when available information does not provide enough data to conclude that human health and ecological risks are under control and no unacceptable exposures are occurring. Protectiveness is deferred at all Five-Year Review sites where PFAS Remedial Investigations are underway or planned because PFAS investigations are following the CERCLA process and existing LUCs and Base Master Planning Processes are in place to

prevent exposure to site soil, groundwater, and other media. The OUs where protectiveness is Deferred include 1, 2, 6, 7, 16, 20, and 21.

Additional issues affecting long-term protectiveness were identified at three sites, along with recommendations for resolution, as follows:

1. OU 1 – Site 78: The remedy will not meet cleanup levels within a reasonable timeframe. Complete remedy optimization and selection to address VOCs in groundwater are recommended for 2027.
2. OU 2 – Site 82: New contaminant sources have been identified since the ROD. The recommendations are to reevaluate alternatives to address new contaminant sources and COCs in groundwater for 2029 and to collect influent and effluent samples for PFAS from the Site 82 treatment system for 2026.
3. OU 16 – Site 89: New contaminant sources have been identified since the ROD. It is recommended to conduct a Non-Time-Critical Removal Action to address additional source areas for 2028.

III. Updates for Sites UXO-30 and UXO-31

Objective: The purpose of this agenda item is to present the Updates for Munitions Response (MR) Sites UXO-30 and UXO-31.

Overview: A presentation was reviewed by Mr. LaTorre.

Site UXO-30 covers 240 acres within the northwest portion of MCAS New River. The north portion of the site is primarily undeveloped forest with saturated and marshy conditions in the eastern portion with a recreation center along Douglas Road. The site consists of the overlapping portions of 3 ranges. The two of the small arms ranges (B-6 50 foot and B-12 Baffled Pistol) and the former B-14 Atomic, Biological, and Chemical Warfare Area are all now determined as “No Further Action.” However, the revised site boundary now includes an 18-acre area known as B-14 Expanded Investigation Area (EIA) since this area is suspected to have been a former training area. Munition items were found within B-14 EIA during the 2019 Preliminary Assessment/Site Inspection (now designated as Site UXO-30).

During a 2023 surface investigation within 7 acres in the western portion of the site, a practice rifle grenade was found. In total, 10 MPPEH items have been found to date, including 7 M-29 practice rifle grenades (inert), 2 Mk 1 expended illumination grenades (pyrotechnic), and 1 M-120 series illumination signal flare (pyrotechnic). It was determined that there is no unacceptable risk from exposure to munitions constituents in soil.

The Remedial Alternative selected for Site UXO-30 is LUCs consisting of 3Rs training, warning sign installation, and on-call or on-site Unexploded Ordnance (UXO) support. The warning sign installation will include vegetation clearance for survey and sign installation around the B-14 EIA boundary. The sign installation and survey scheduled for April/May 2026. The survey plat will be submitted to the Onslow County.

A status update for UXO-31 was provided. The remedial investigation approach for UXO-31 consisted of 100% Digital Geophysical Mapping (DGM) over 153 acres. Drone geophysics was used due to the terrain and limited access to areas. Outside of the site boundary, approximately 4% coverage was obtained using DGM along the transects. Upcoming field work at UXO-31 includes 50 acres of “mag and dig” on Bear Island at Bear Inlet, advanced geophysical classification (AGC), and terrestrial and underwater anomaly intrusive investigation.

AGC will be used to classify metallic sources as either a possible munitions item or likely cultural debris. Flown over the site using drone technology, AGC will be used to potentially reduce the number of required investigation locations, both terrestrial and underwater, which would reduce investigation time

in the field. This could reduce the number of targets that are difficult to safely access by boat or walking. AGC may also help identify what the large (>10 feet wide) anomalies are without digging.

IV. RAB Business

Mr. Richard announced to the RAB there will be an open house on April 29, 2026, at the Hilton Garden Inn regarding off-Base drinking water and PFAS-impact groundwater. He will email more specific details to the RAB. The next RAB meeting is planned for July 22, 2026. Mr. Richard closed the meeting.



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Sixth Five-Year Review

MCB Camp Lejeune

Restoration Advisory Board Meeting

April 15, 2026





Agenda

- Purpose of the Five-Year Review
 - Sixth Five-Year Review Sites
 - Five-Year Review Process
 - Sixth Five-Year Review Protectiveness Determinations
- 

Purpose of the Five-Year Review

- Required under CERCLA for sites where contaminants exist at levels that would not allow for unlimited use and unrestricted exposure, and a Record of Decision (ROD) is in place
- Purpose
 - Evaluate implementation and performance of remedies in-place
 - Determine protection of human health and the environment
- Schedule
 - Five years from the initiation of the first remedial action and no later than five years from the signature date of the previous review

Key Terms

Unlimited Use/Unrestricted Exposure (UU/UE). No restrictions are necessary to protect human health and the environment from leftover contaminants

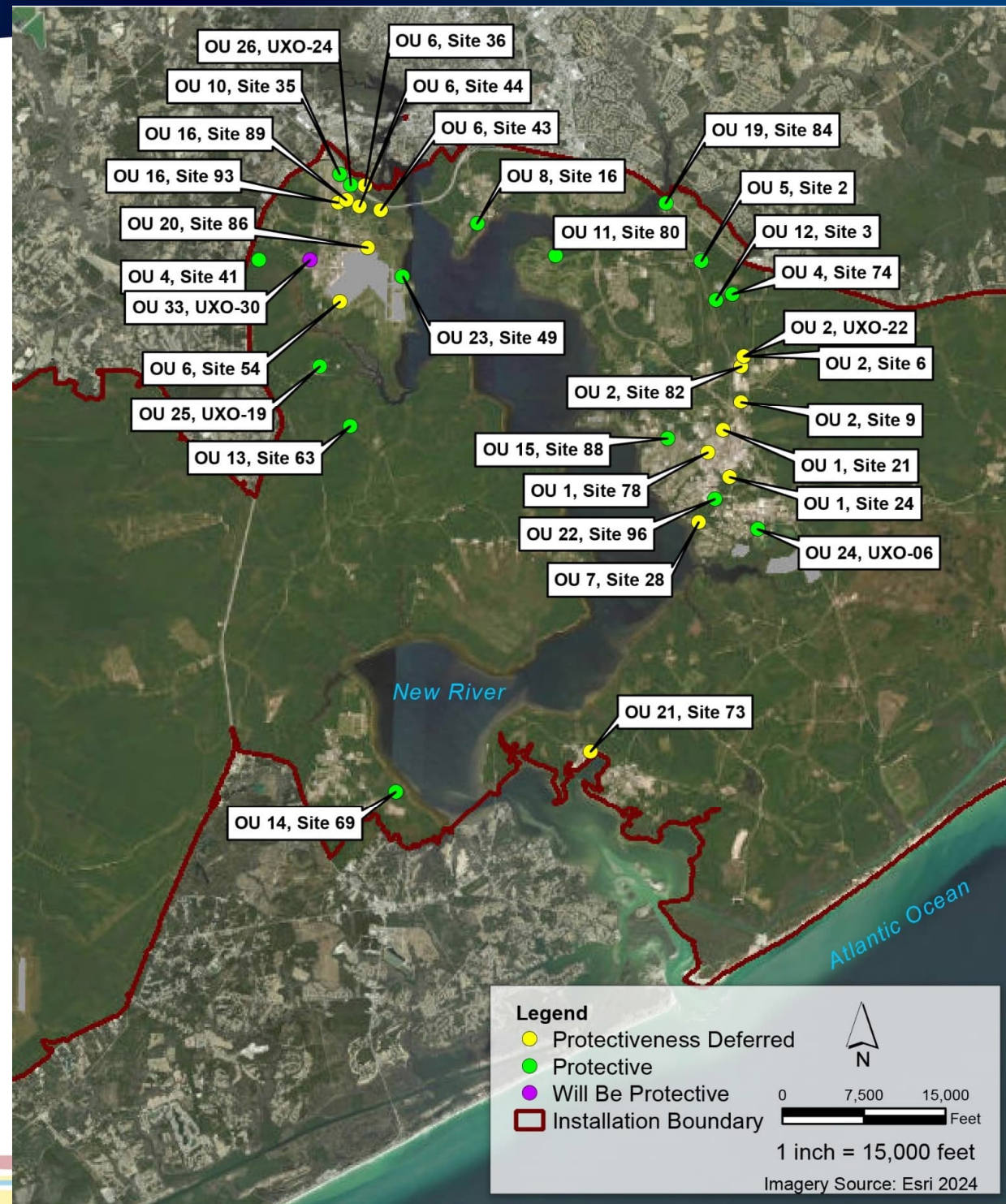
Record of Decision (ROD). A public document that explains which response alternative(s) will be used to address contamination at a Superfund site.



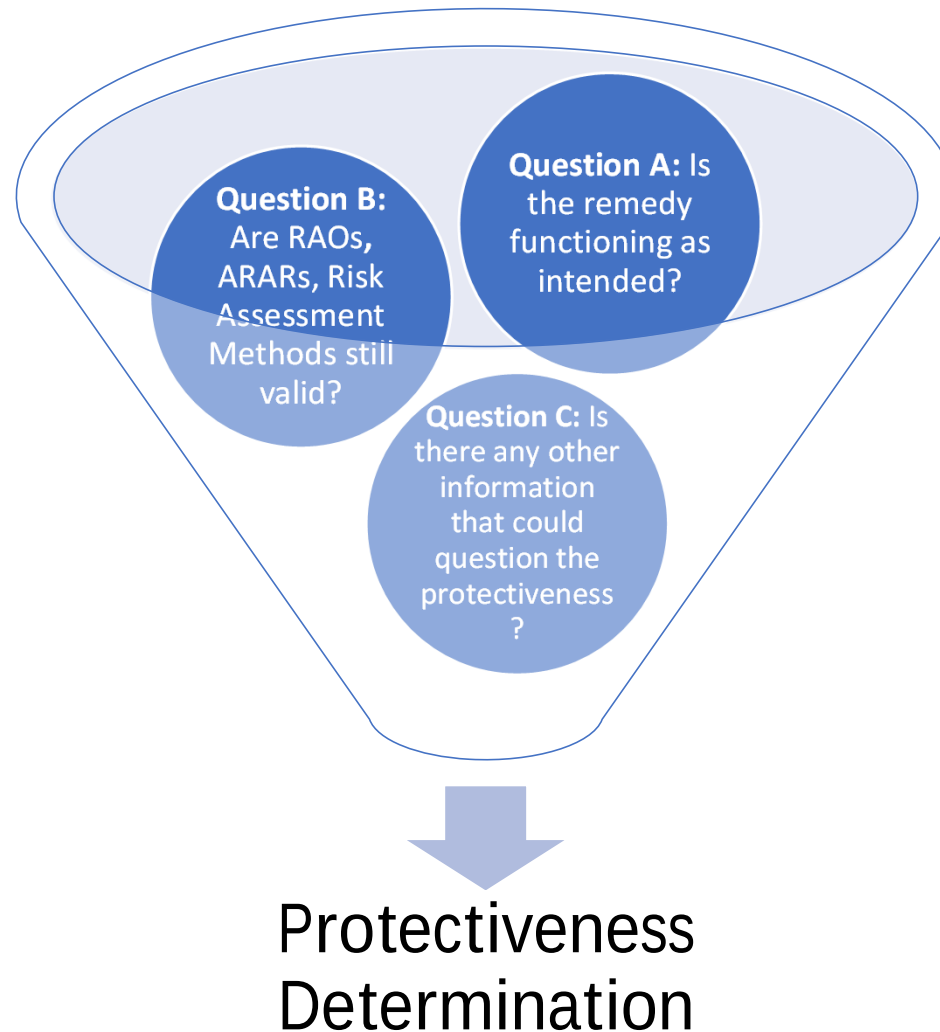
Sixth Five-Year Review Sites

- 23 Operable Units, 33 sites

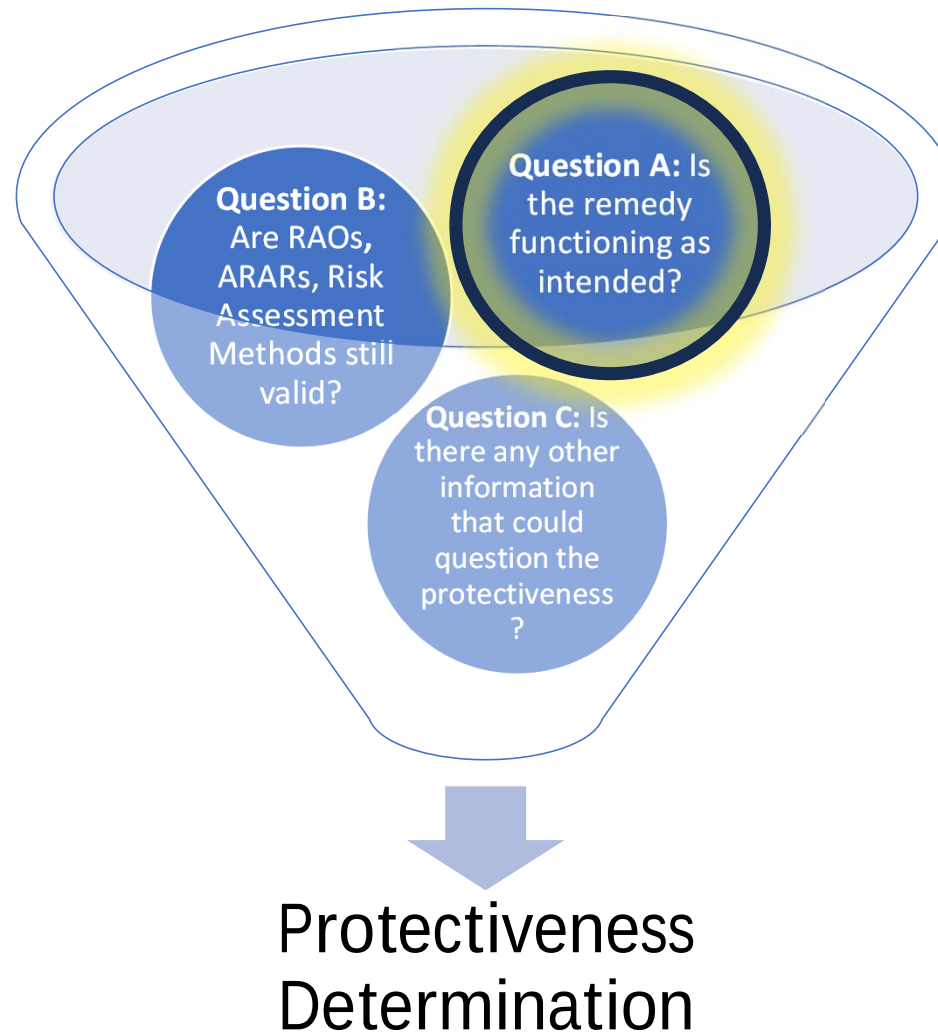
- OU 1 (Site 21, 24 and 78)
- OU 2 (Site 6, 9, 82, UXO-22)
- OU 4 (Site 41 and 74)
- OU 5 (Site 2)
- OU 6 (Site 36, 43, 44, and 54)
- OU 7 (Site 28)
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- OU 22 (Site 96)
- OU 23 (Site 49)
- OU 24 (Site UXO-06)
- OU 25 (Site UXO-19)
- OU 26 (Site UXO-24)
- OU 33 (Site UXO-30)



Five-Year Review Process: How do we determine protectiveness?



Five-Year Review Process: How do we determine protectiveness?



Conduct:

- Site Visit/Inspection
- Interviews

Review:

- RODs/ESDs
- Previous Five-Year Reviews
- Monitoring Data
- LTM Reports
- LUC Inspections
- Pilot studies
- Other investigations

Site Visit/Inspection

OU (Site)

OU 5 (Site 2)

OU 6 (Sites 36, 43, 44, and 54)

OU 12 (Site 3)

OU 20 (Site 86)

OU 22 (Site 96)

OU 23 (Site 49)



Site 2



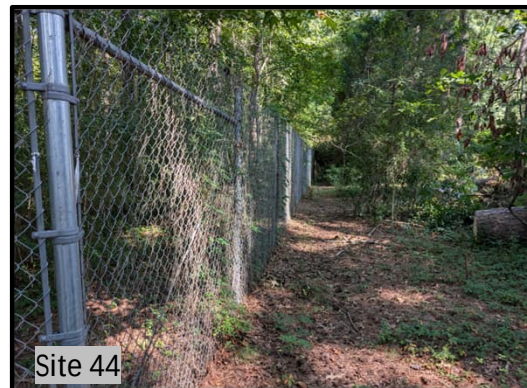
Site 36 (MWs in woods)



Site 43 (PFAS RI Underway)



Site 96



Site 44



Site 49



Site Visit/Inspection

OU (Site)

OU 1 (Sites 21, 24, 78)



Site 78 North



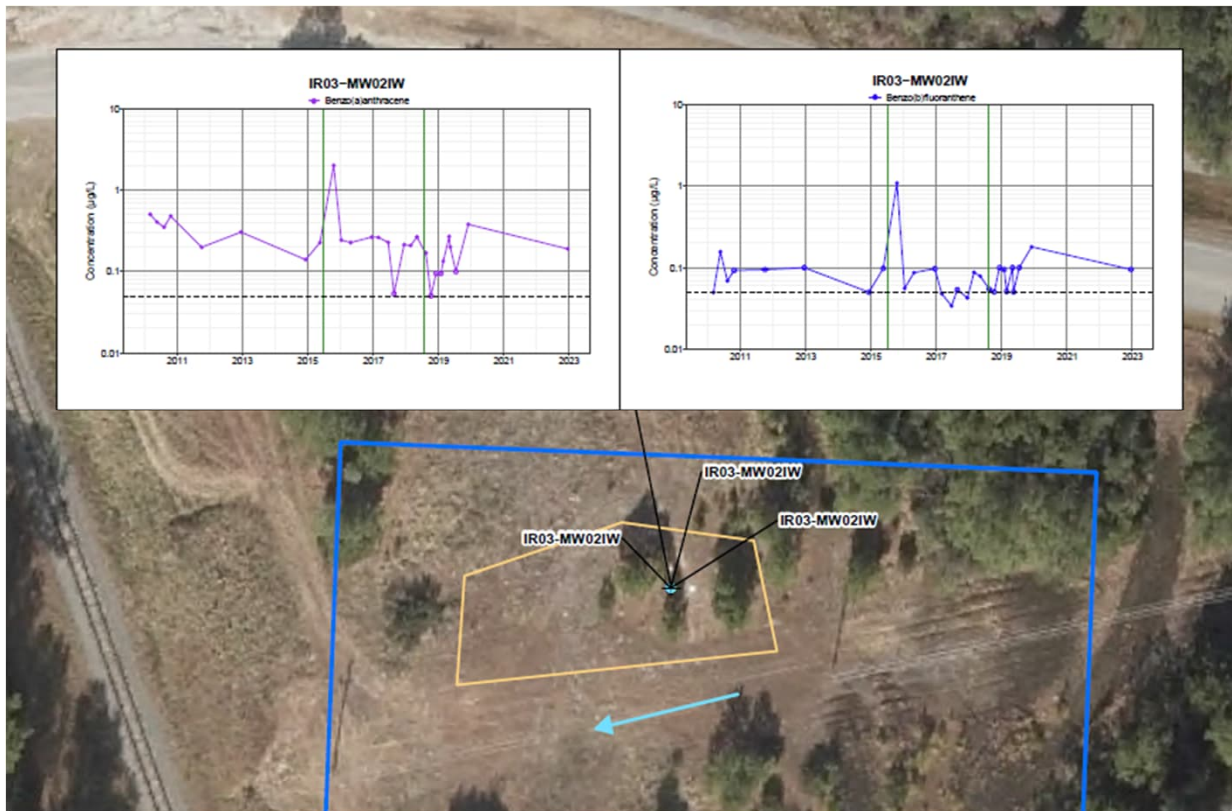
Site 78 South



Typical Monitoring Well Conditions

Document/Data Review

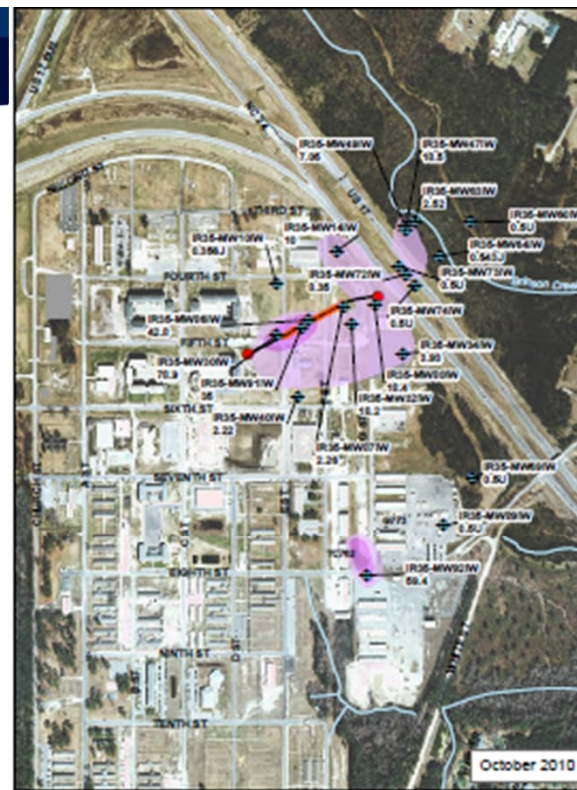
• Data Trends



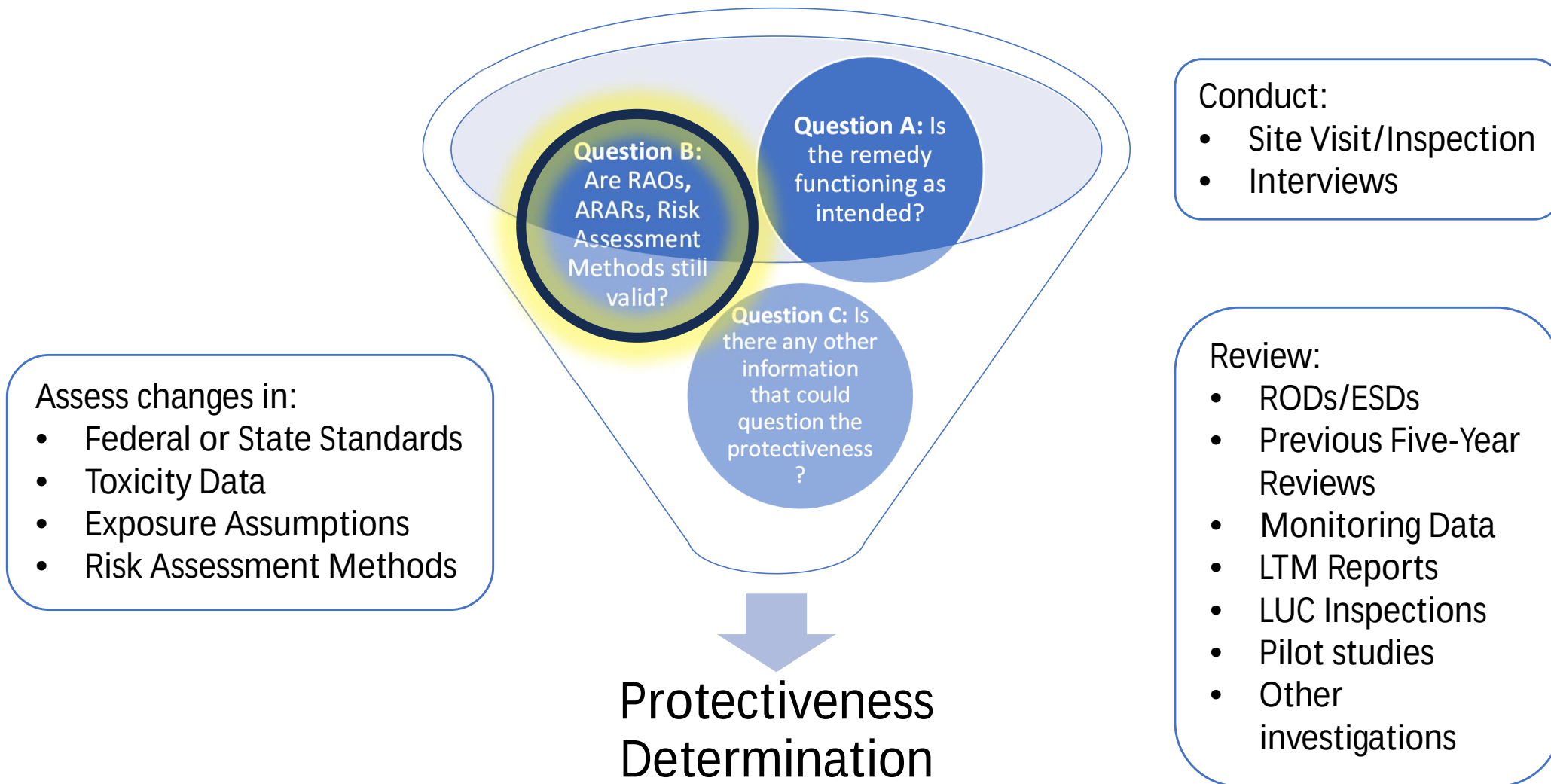
MK Result	Trend
86.4% (+)	No Trend
93.2% (-)	Stable
93.2% (-)	Stable
93.2% (+)	No Trend
76.5% (-)	No Trend
>50% ND	>50% ND
89.8% (-)	No Trend
86.4% (+)	No Trend
75.8% (-)	No Trend
75.8% (-)	Stable
75.8% (-)	Stable
99.2% (sig -)	Decreasing
75.8% (-)	No Trend
95.8% (sig -)	Decreasing
95.8% (sig -)	Decreasing
75.8% (-)	Stable
99.2% (sig -)	Decreasing
88.3% (-)	No Trend
95.8% (sig -)	Decreasing
88.3% (-)	Stable
97.2% (sig +)	Increasing
81.4% (-)	Stable
76.5% (-)	No Trend
98.2% (sig +)	Increasing
50% (+)	No Trend
42.3% (+)	Stable
76.5% (+)	Stable
64% (-)	Stable
>50% ND	>50% ND
93.2% (-)	Stable
>50% ND	>50% ND
76.5% (+)	Stable
64% (+)	Stable
50% (-)	No Trend

Document/Data Review

- Plume stability
 - Current and historical concentrations
 - Is the extent within LUCs?
 - Is it shrinking/migrating /expanding?

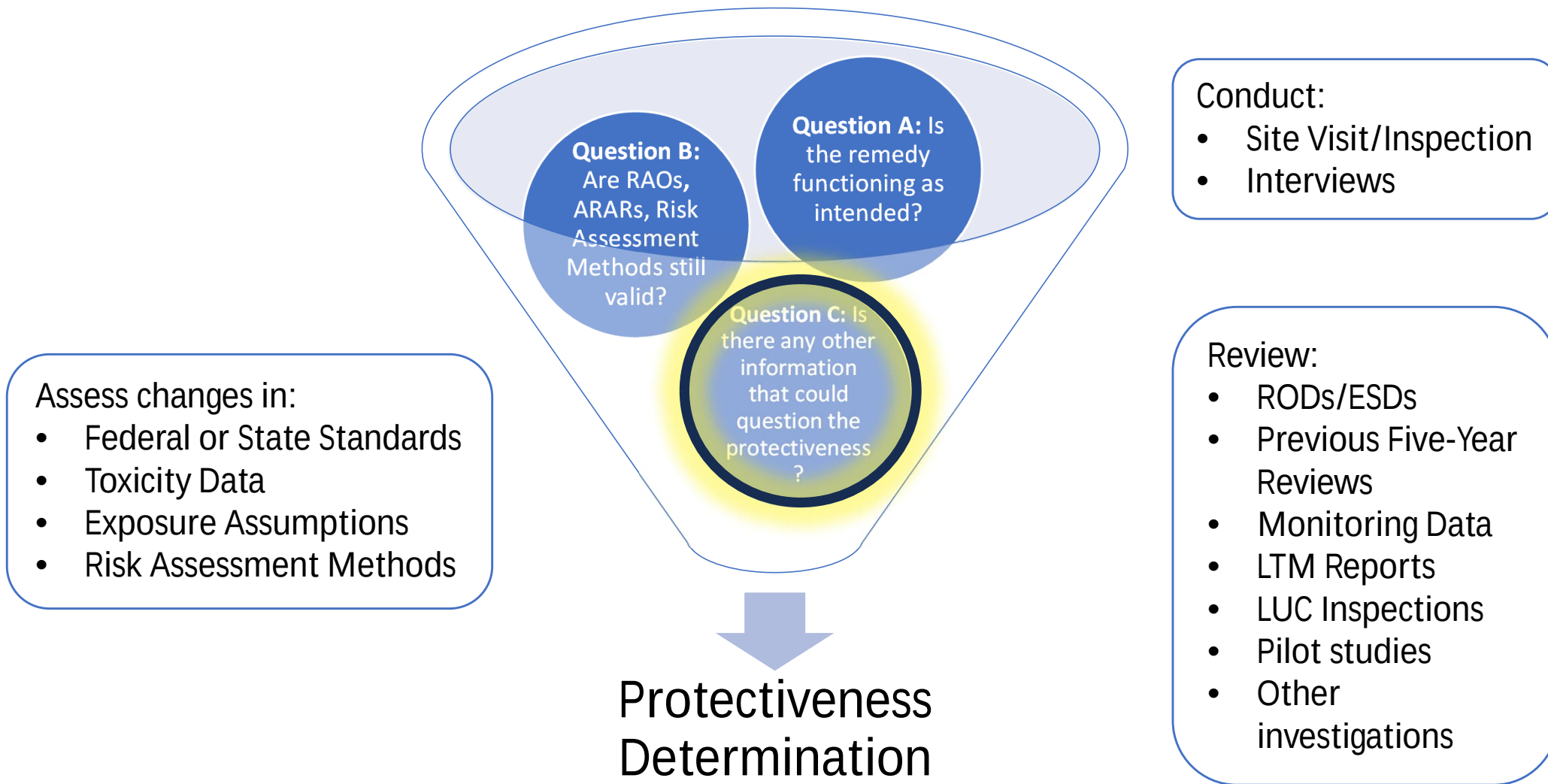


Five-Year Review Process: How do we determine protectiveness?



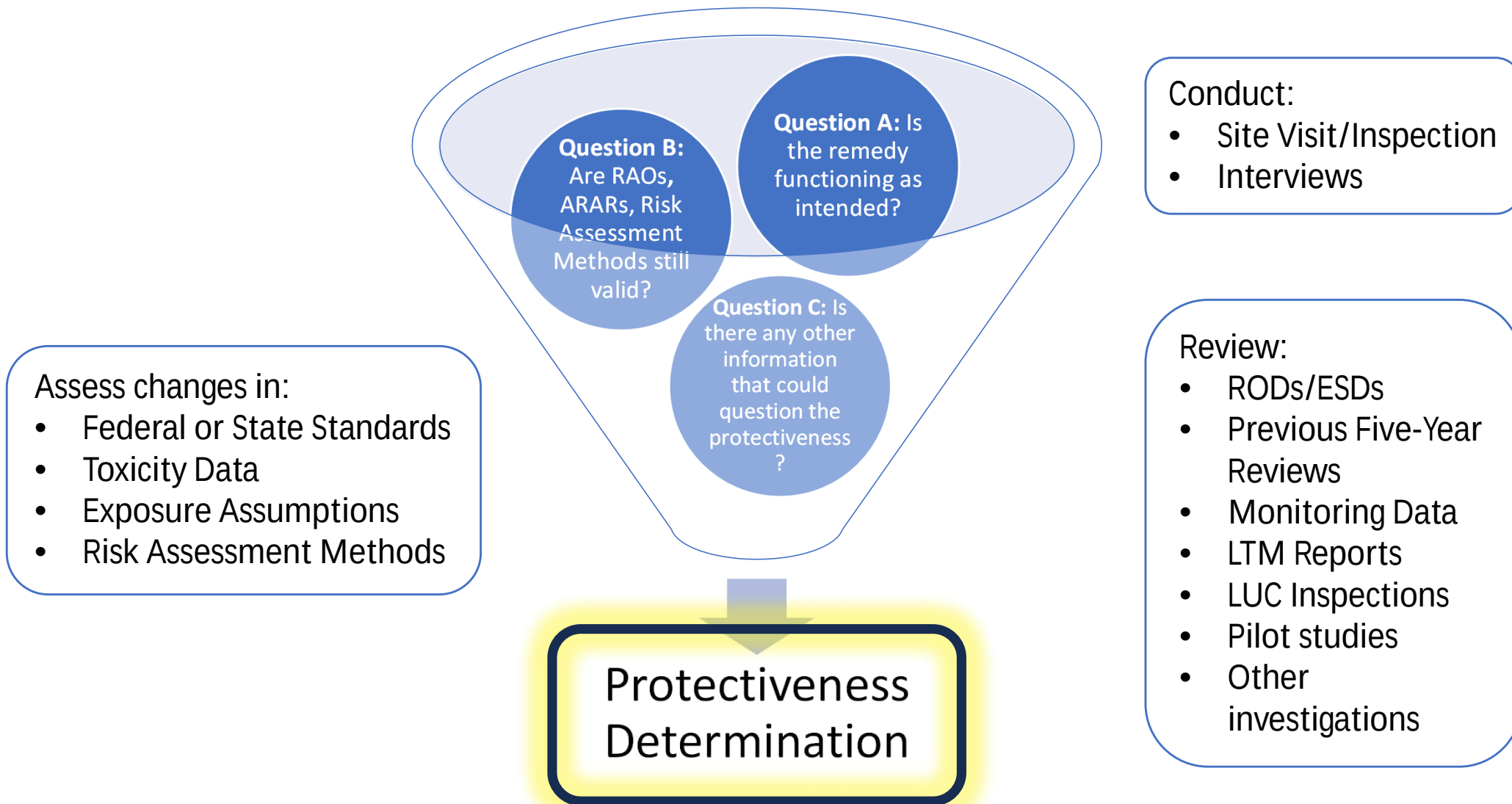
Five-Year Review Process:

How do we determine protectiveness?



Five-Year Review Process:

How do we determine protectiveness?



Possible Protectiveness Determinations

- Protective
- Protective in the Short-Term
- Will Be Protective
- Deferred
- Not Protective

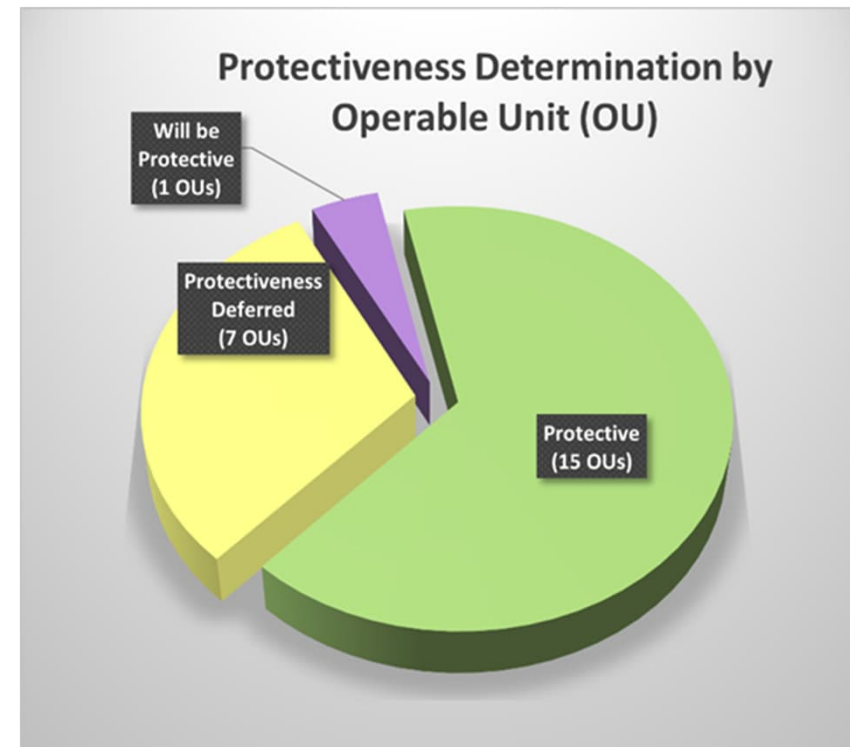
Possible Protectiveness Determinations

- Protective
- Protective in the Short-Term
- Will Be Protective
- Deferred
- Not Protective

Protectiveness determination
in the Sixth Five-Year Review

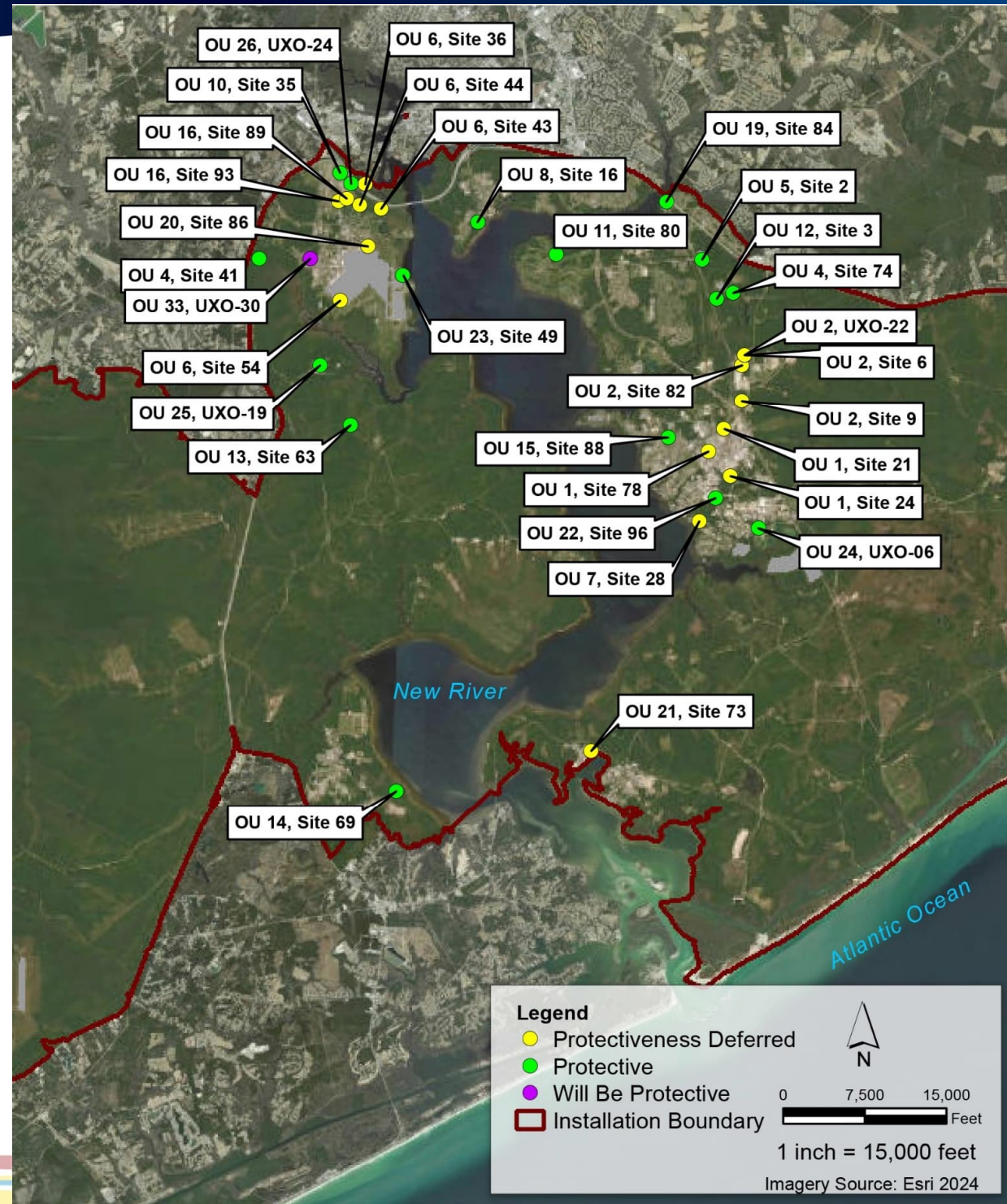
Sixth Five-Year Review Protectiveness Determinations

- Protective (15 OUs): The remedy is functioning as intended; human and ecological risks are currently under control and anticipated to be under control in the future.



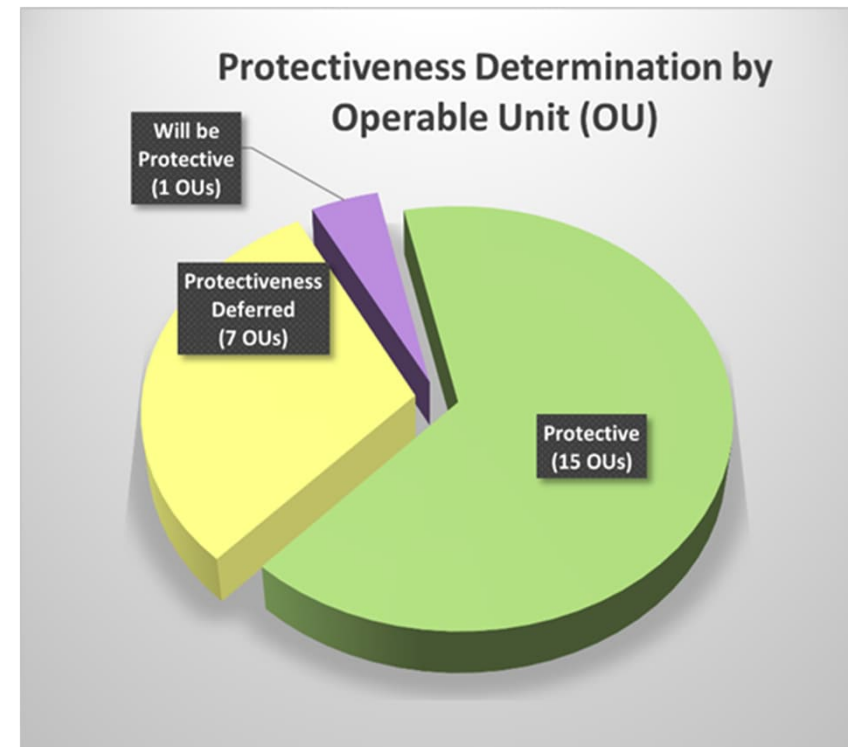
Protective

- 23 Operable Units
 - OU 4 (Site 41 and 74)
 - OU 5 (Site 2)
 - OU 8 (Site 16)
 - OU 10 (Site 35)
 - OU 11 (Site 80)
 - OU 12 (Site 3)
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 - OU 24 (Site UXO-06)
 - OU 25 (Site UXO-19)
 - OU 26 (Site UXO-24)



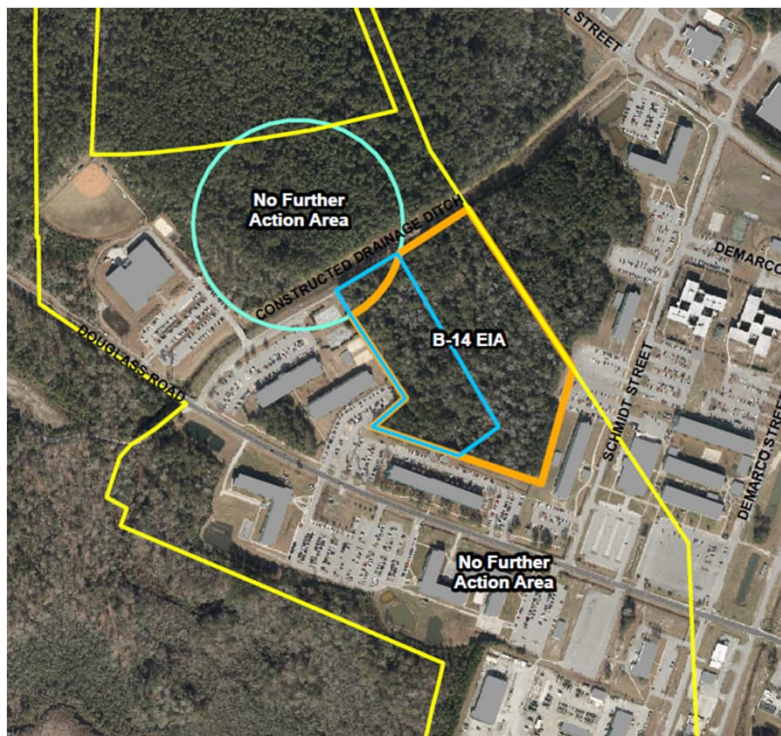
Sixth Five-Year Review Protectiveness Determinations

- Will Be Protective (1 OU): Human and ecological exposures are under control, but the remedy has not been fully implemented.



Will Be Protective

- OU 33, Site UXO-30
 - ROD signed in February 2025
 - Remedial Design and Action (LUCs) were in progress at the time of the Five-Year Review
 - The Remedy is expected to be protective once LUCs are fully in place



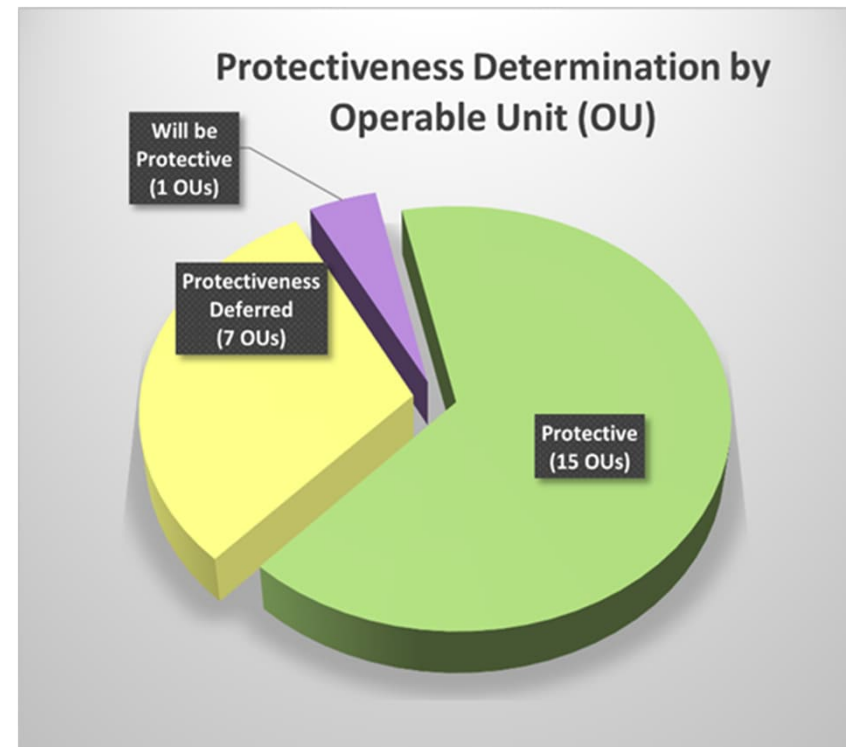
Legend

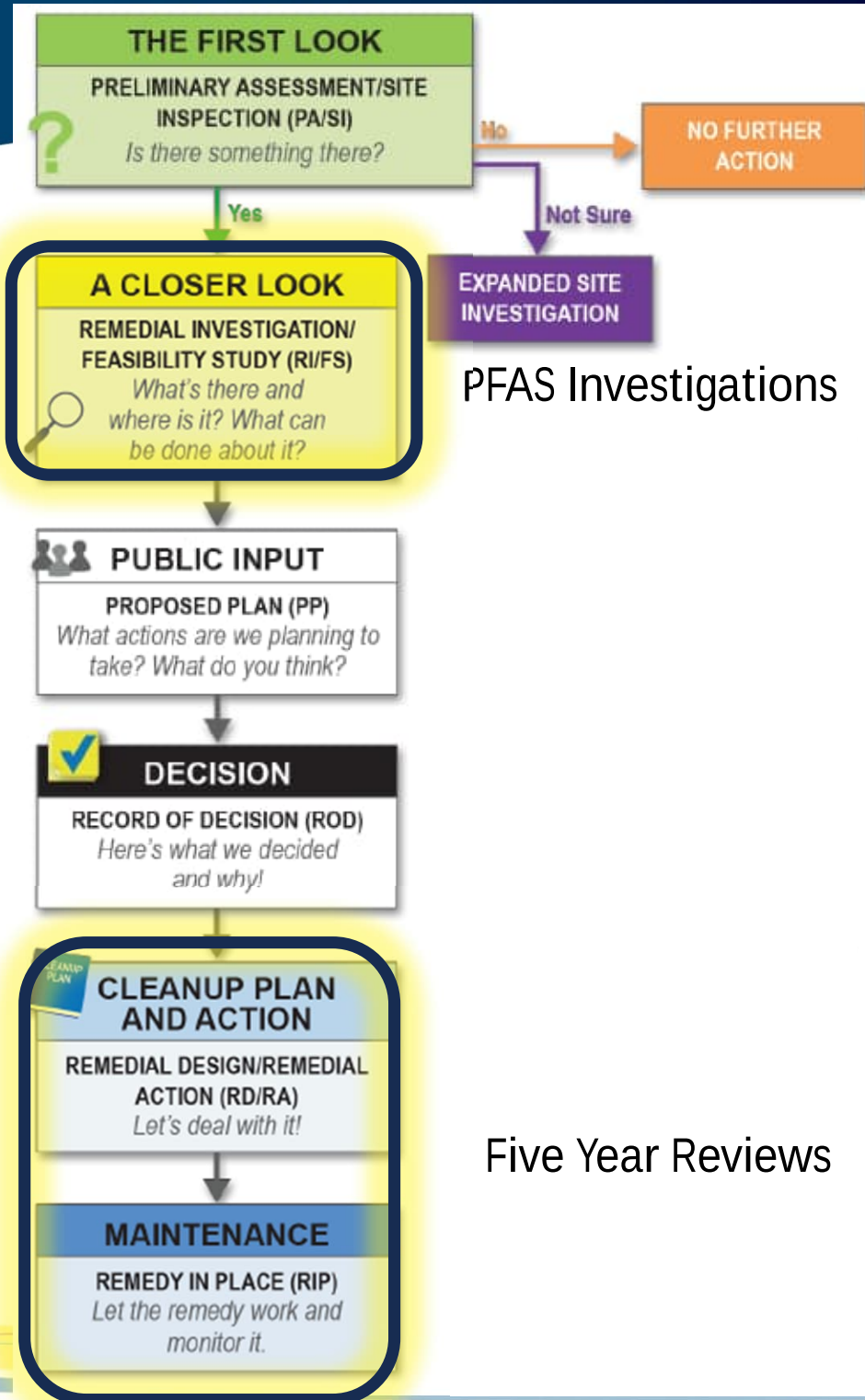
-  Original Site UXO-30 Boundary (includes the SAR SDZs) (No Further Action Required)
-  Former B-14 ABC Warfare Area Boundary (No Further Action Required)
-  Revised Site UXO-30 Boundary (B-14 Expanded Investigation Area) (Proposed Land Use Control Boundary)
-  Surface Clearance Boundary

Sixth Five-Year Review Protectiveness Determinations

- **Protectiveness Deferred (7 OUs):** This determination is generally used when available information does not provide enough data to conclude that human health and ecological risks are under control and no unacceptable exposures are occurring.

Protectiveness is deferred at all Five-Year Review sites where PFAS Remedial Investigations are underway or planned.





Why Protectiveness Deferred?

- PFAS investigations are following the CERCLA process
- Existing Land Use Controls and Base Master Planning Processes are in place to prevent exposure to site soil, groundwater, and other media.

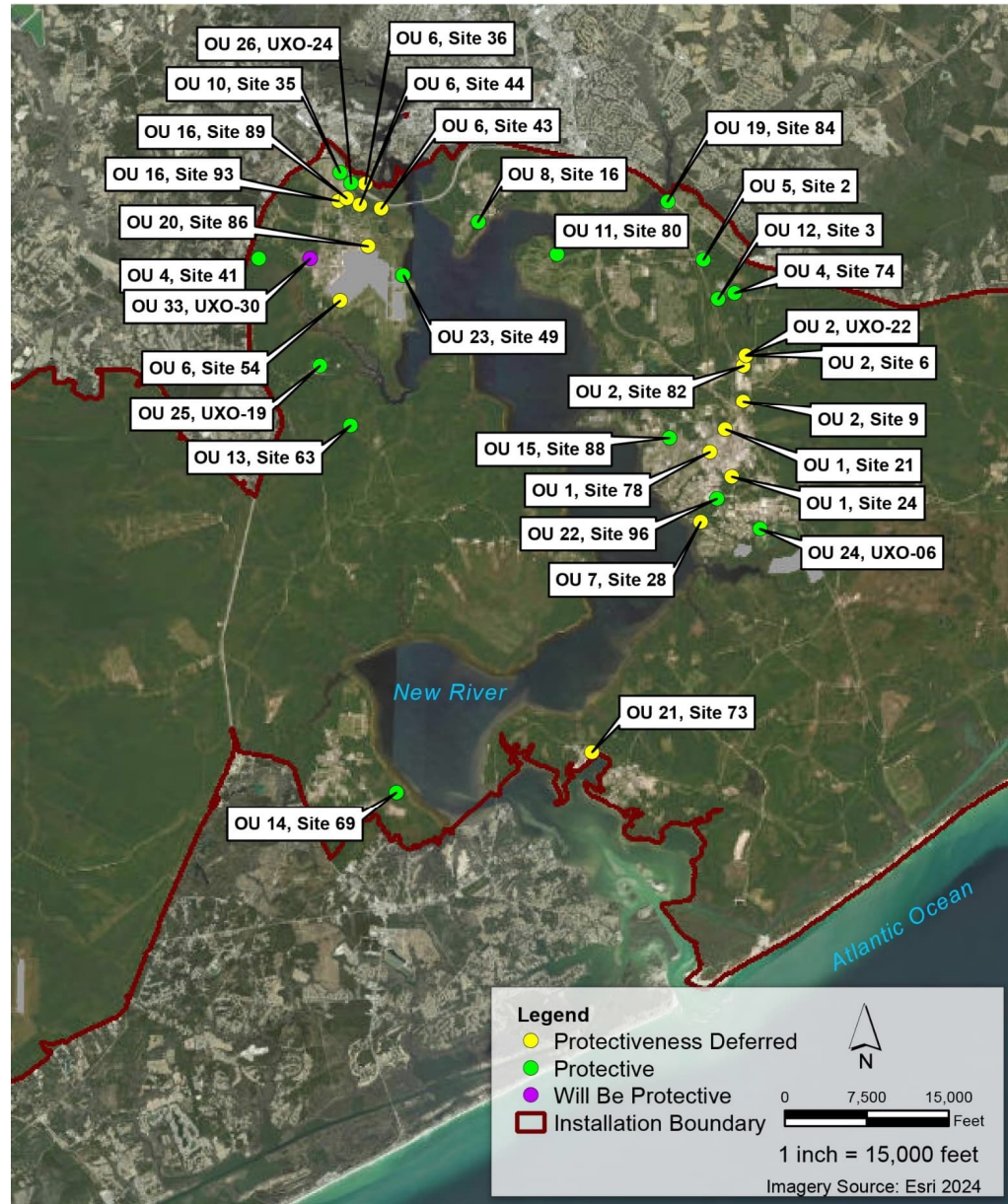
Protectiveness Deferred

- 7 Operable Units
 - OU 1 (Site 21, 24 and 78*)
 - OU 2 (Site 6, 9, 82*, UXO-22)
 - OU 6 (Site 36, 43, 44, and 54)
 - OU 7 (Site 28)
 - OU 16 (Site 89* and 93)
 - OU 20 (Site 86)
 - OU 21 (Site 73)

Notes:

bold sites are undergoing PFAS RIs

*Additional issues affecting long-term protectiveness identified

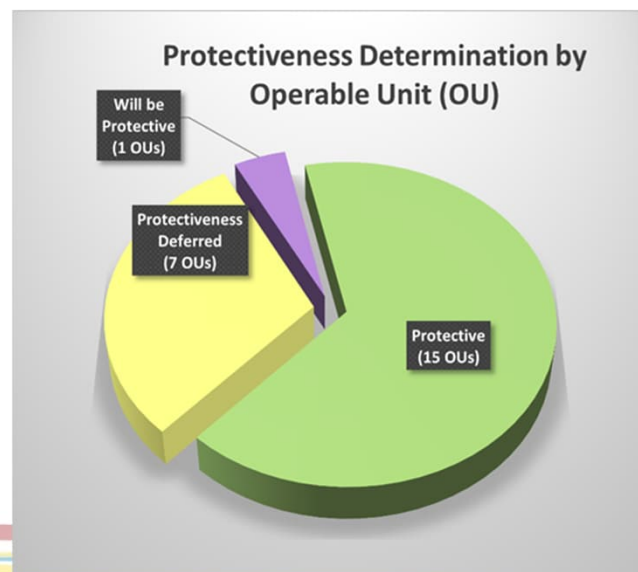


Additional Issues and Recommendations

Operable Unit/Site	Issue and Recommendation (Milestone date)
OU 1 – Site 78	The remedy will not meet cleanup levels within a reasonable timeframe. Complete remedy optimization and selection to address VOCs in groundwater (2027)
OU 2 – Site 82	New contaminant sources identified since the ROD. Reevaluate alternatives to address new contaminant sources and COCs in groundwater (2029) Collect influent and effluent samples for PFAS from the Site 82 treatment system (2026)
OU 16 – Site 89	New contaminant sources identified since the ROD. Conduct a Non-Time-Critical Removal Action to address additional source areas. (2028)

Summary

- Of the 23 Operable Units (OUs) that were evaluated
 - 15 are Protective
 - 1 Will be Protective
 - 7 are Deferred
- While evaluation of PFAS is ongoing, the Navy's existing LUCs and processes in place at the 11 RI sites prevent exposure to site media containing PFAS.





Questions?





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Updates for Sites UXO-30 and UXO-31

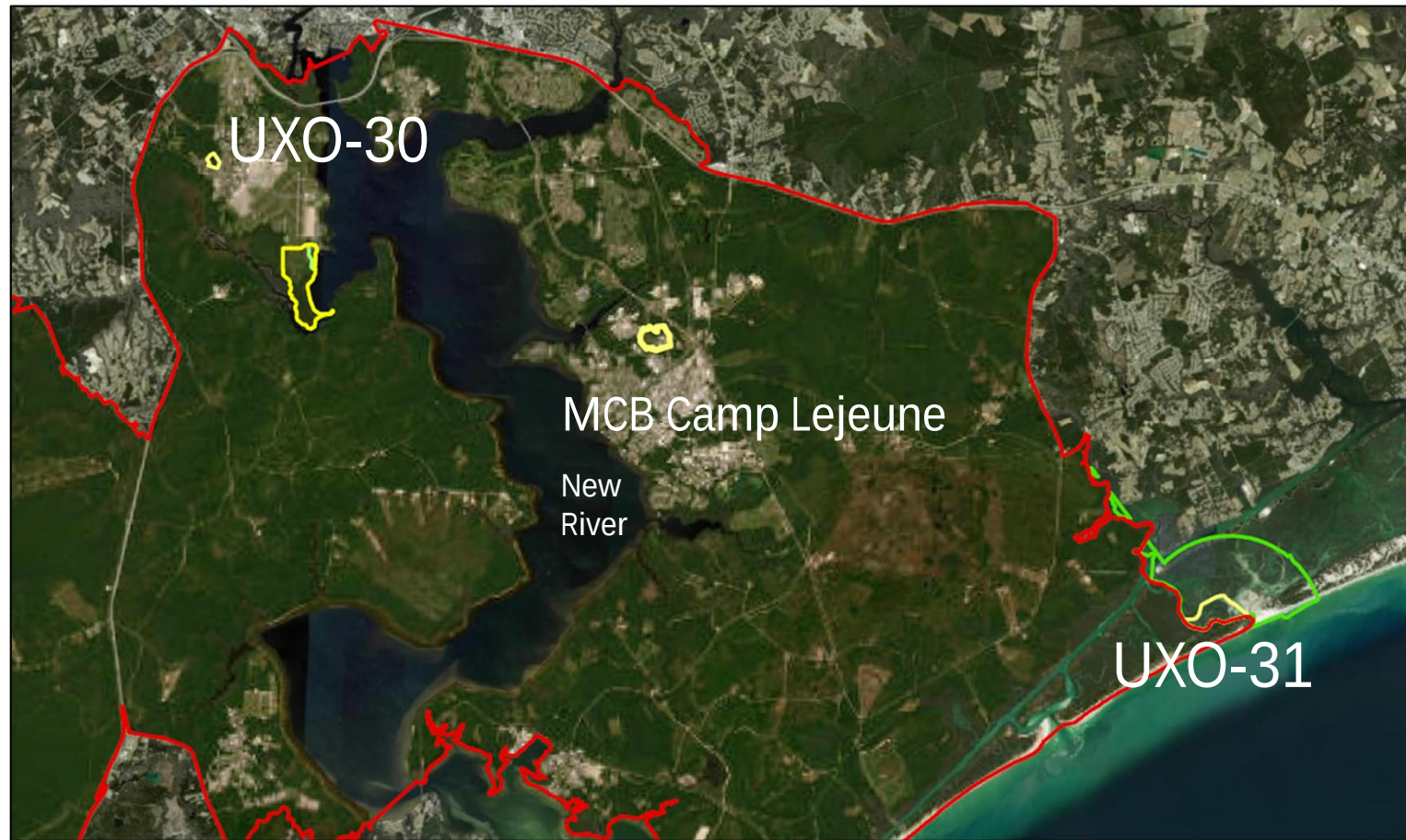
MCB Camp Lejeune
Restoration Advisory Board Meeting
April 15, 2026



Objectives

Present Updates for
Munitions Response
(MR) Sites:

- UXO-30
- UXO-31



MR Site Locations



Site UXO-30

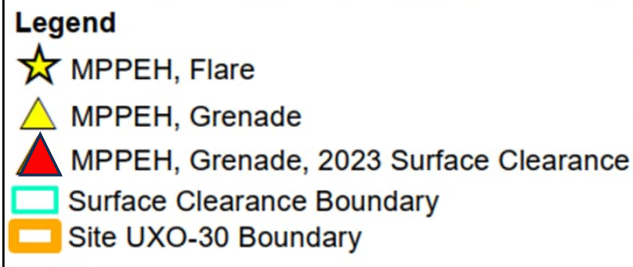
Site UXO-30 Background

- 240 acres within northwest portion of MCAS New River
- Initially consisted of portions of two small arms ranges surface danger zones (B-6 50-foot and B-12 Baffled Pistol) and former B-14 Atomic, Biological, and Chemical Warfare Area – these areas now determined as “No Further Action”
- Revised Site boundary now includes an 18-acre area known as B-14 Expanded Investigation Area (EIA)
 - Based on historical aerial photographs, this area may have been a former training area
- Consists of undeveloped forest, with saturated and marshy conditions in eastern portion
- Munition items were found within B-14 EIA during the 2019 Preliminary Assessment/Site Inspection (now designated as Site UXO-30)



Surface Investigation and Site Findings

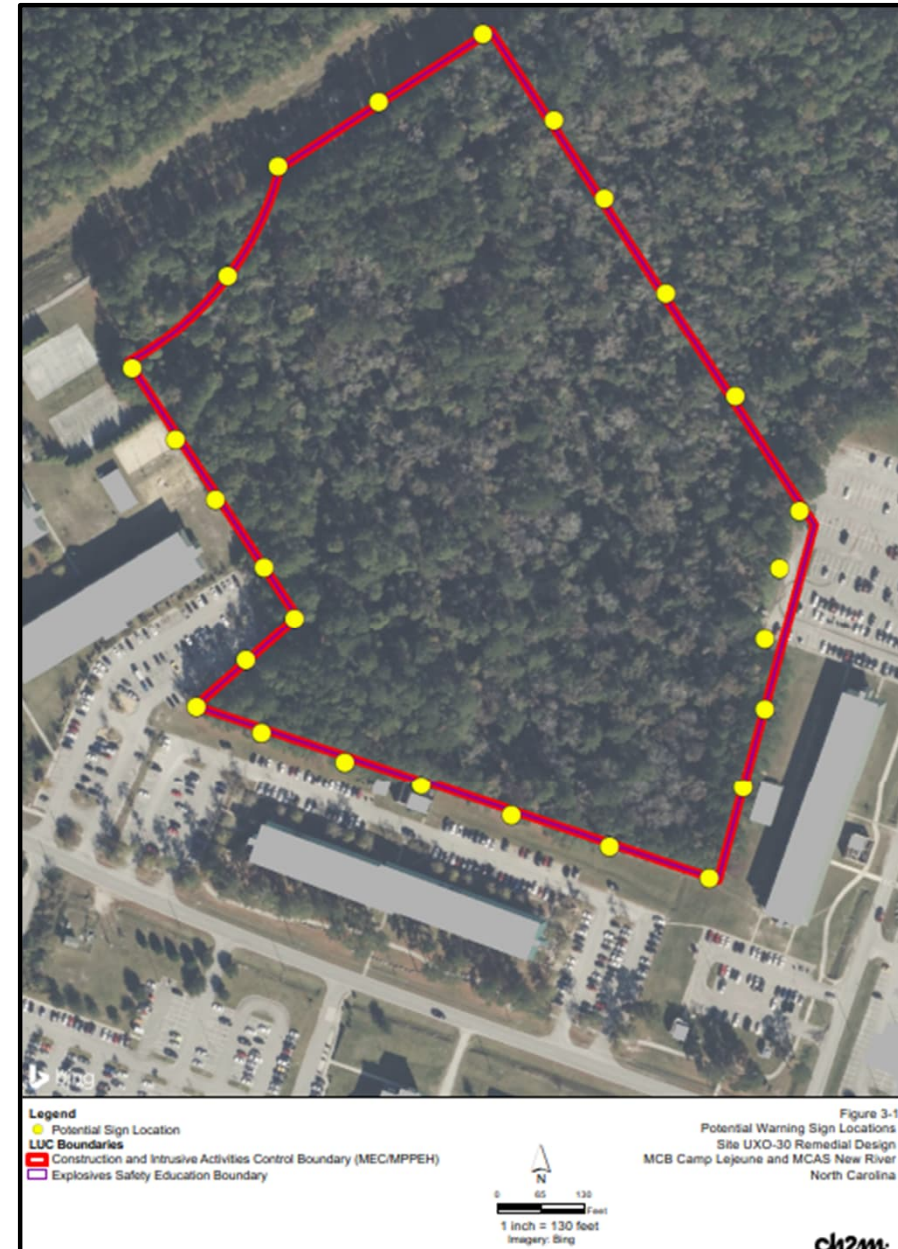
- In 2023, surface investigation completed within 7 acres (western portion) considered potentially accessible to Base personnel (1 practice rifle grenade found)
- 10 MPPEH items found to date:
 - 7: M-29 practice rifle grenades (inert)
 - 2: Mk 1 expended illumination grenades (pyrotechnic)
 - 1: M-120 series illumination signal flare (pyrotechnic)
- No unacceptable risk from exposure to munitions constituents in soil
- Remedial Alternative Selected for Site UXO-30 is Land Use Controls (LUCs) consisting of 3Rs training, warning sign installation, and on-call or on-site Unexploded Ordnance (UXO) support



Site UXO-30

UXO-30 Warning Sign Installation

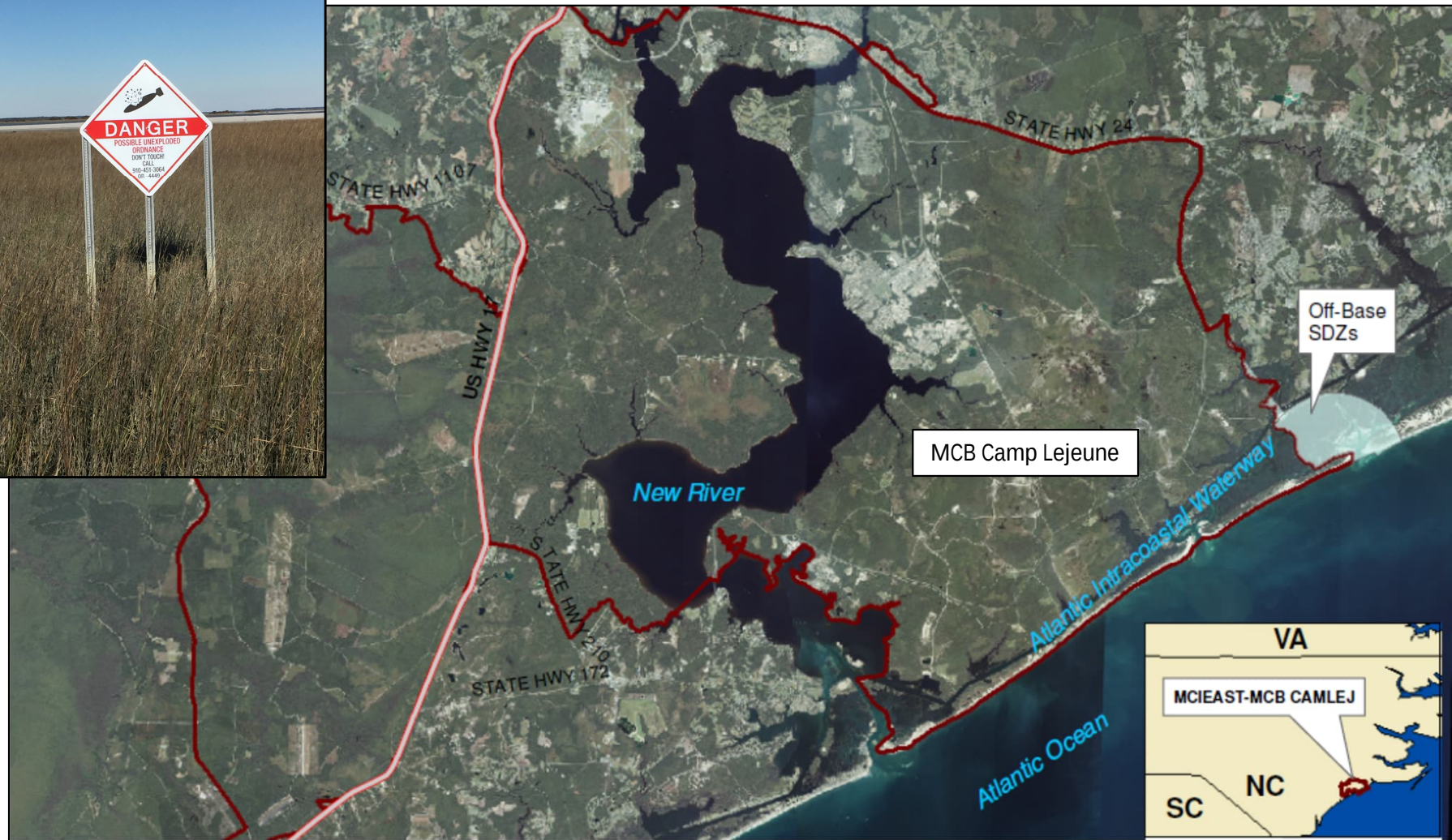
- Vegetation cleared for survey and sign installation (see *photograph below*)
- Sign installation and survey (April/May 2026)
- Survey plat to be submitted to the county





Site UXO-31

Site UXO-31 (Off-Base SDZs) Location



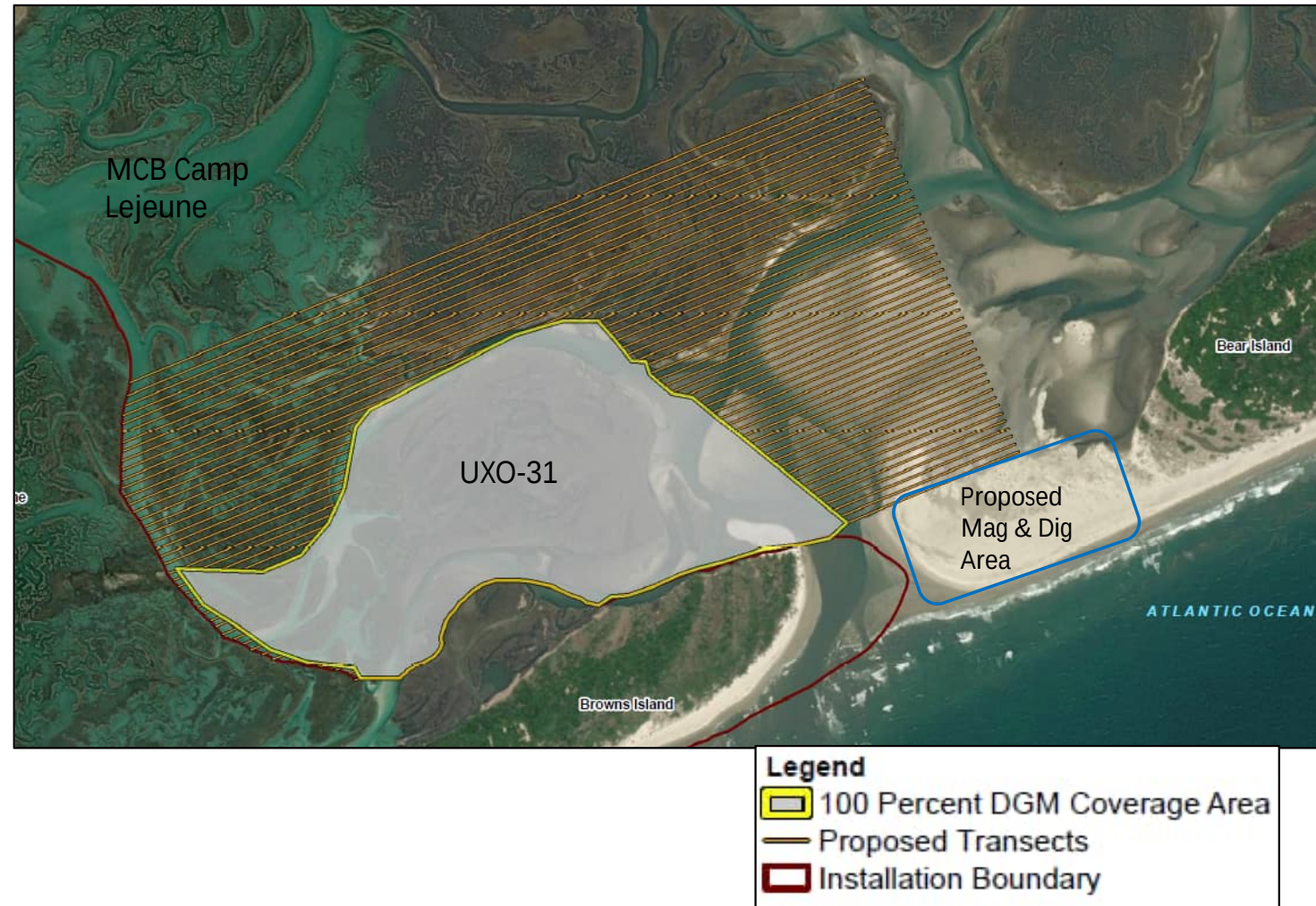
- Legend**
- Highways
 - Off-Base SDZs
 - Installation Boundary

Remedial Investigation Approach

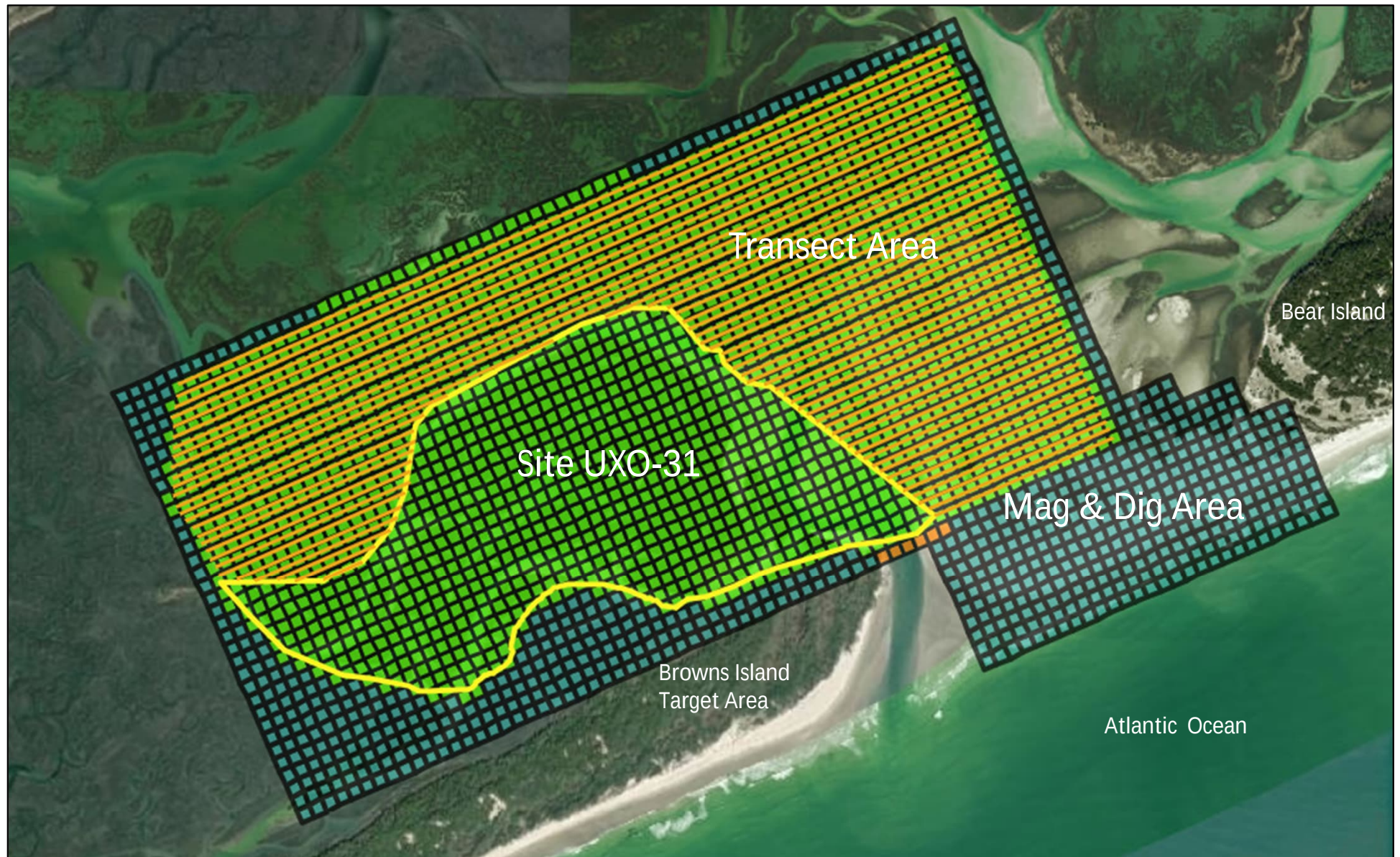
- UXO-31 100% Digital Geophysical Mapping (DGM) completed
 - 153 acres
 - Drone geophysics was used due to terrain and limited access
- Outside the Site Boundary: ~4% coverage using DGM along transects completed

Upcoming Field Work:

- 50 Acres of mag & dig on Bear Island at Bear Inlet
- Advanced Geophysical Classification (AGC)
- Anomaly Intrusive Investigation:
 - Terrestrial and Underwater



DGM and Mag & Dig Investigation Areas





Drone and Magnetometer



Surveying the Study Area



Bear Inlet at High Tide



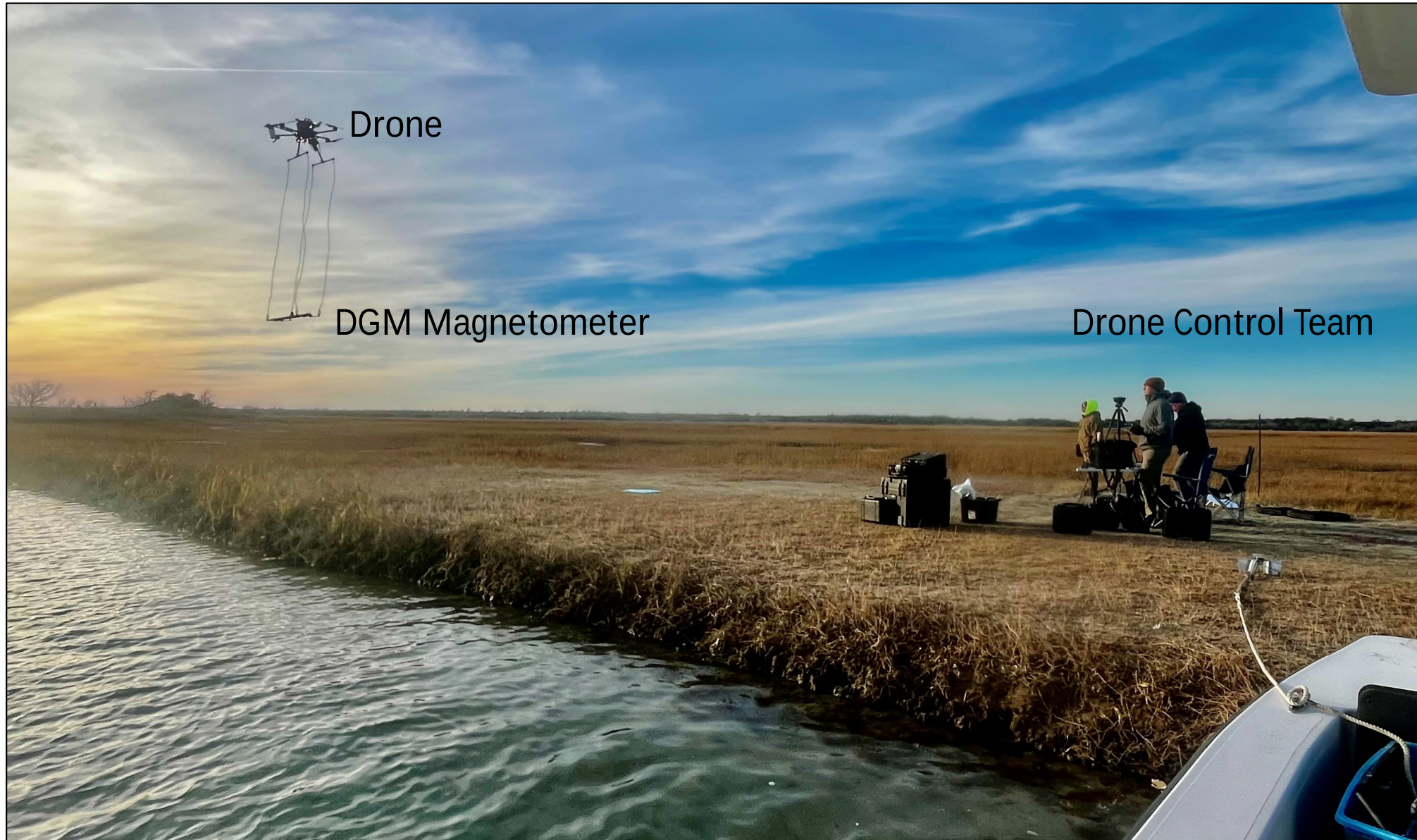
DGM/Drone Control Center



Sand Bar

Site Water Channel at Low Tide

DGM Drone in Flight



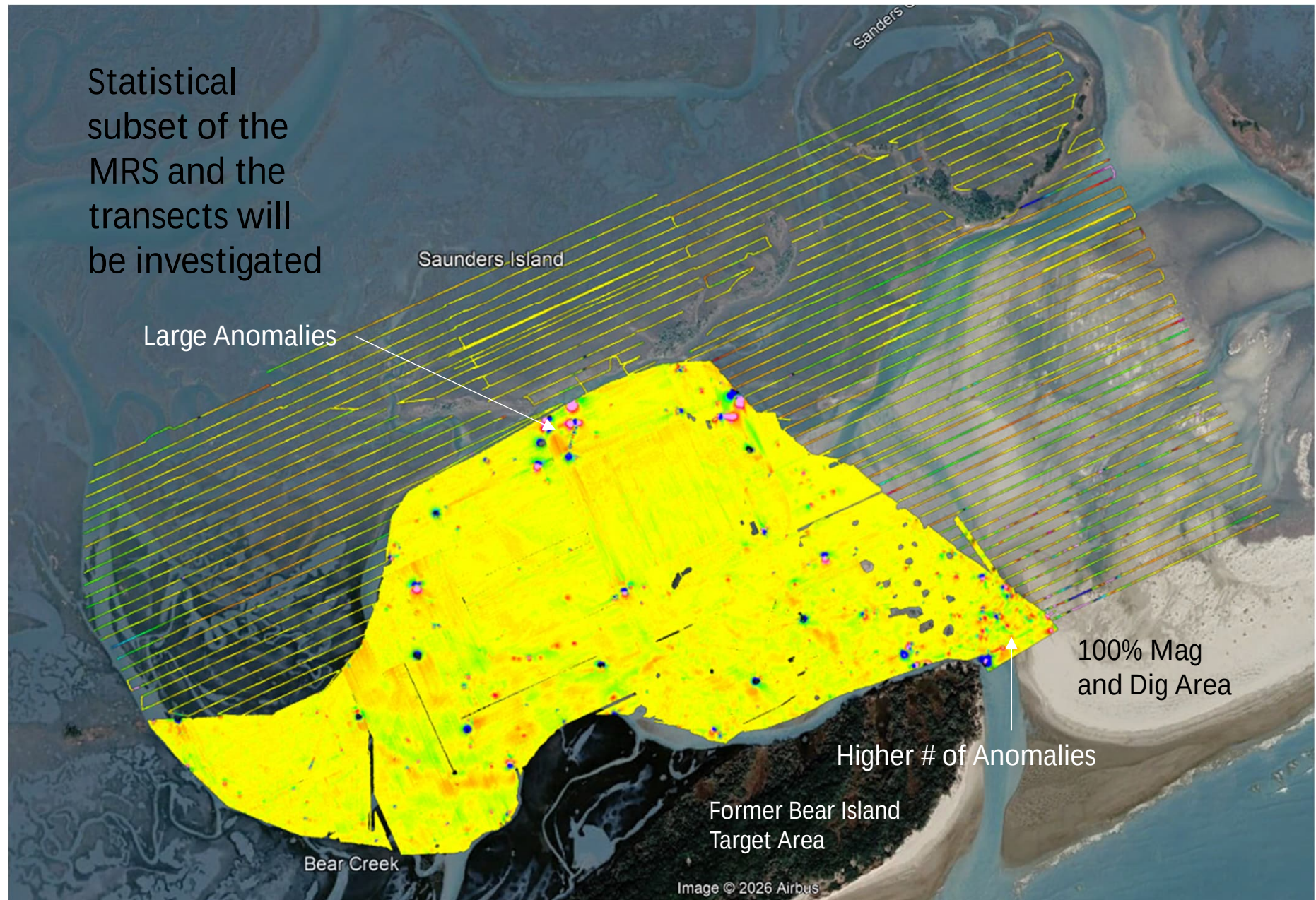
Drone and Magnetometer Flying over Site



DGM Drone in Flight

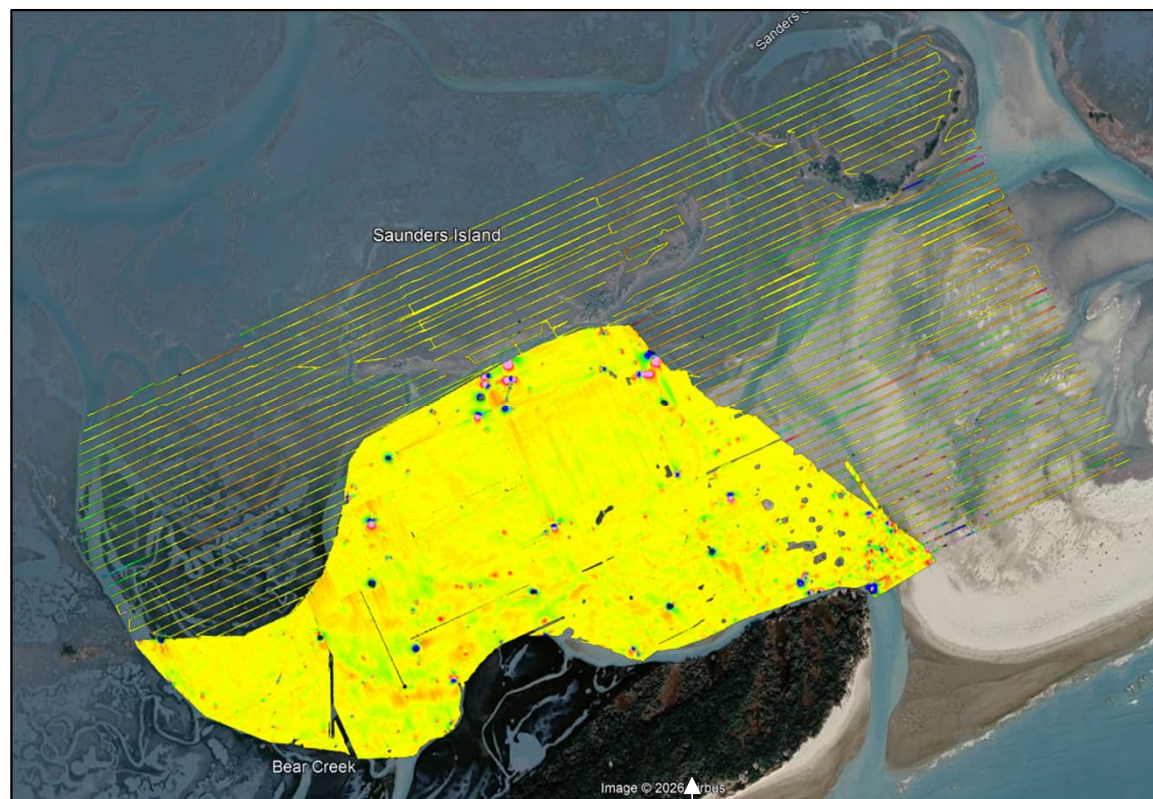


Preliminary DGM Results



Advanced Geophysical Classification (AGC) Survey

- AGC classifies metallic sources as either a possible munitions item or likely cultural debris
- Use drone technology to fly over select DGM identified anomalies to potentially reduce the number of required investigation locations, both terrestrial and underwater, thus reducing investigation time in the field
- May reduce the number of targets that are difficult to safely access by boat or walking
- May help identify what the large (>10 ft wide) anomalies are without digging



Questions?

