

# FACT SHEET

# Five-Year Review Overview and Addressing Emerging Issues



## Introduction and Purpose

Five-year reviews (FYRs) provide a critical assessment of the ongoing protectiveness of remedies implemented under the Environmental Restoration Navy (ER, N) Program. Remedial project managers (RPMs) should be thinking ahead to the next FYR, working to ensure that the selected remedy is protective of human health and the environment. The purpose of this fact sheet is to provide: (1) basic FYR information; (2) direction on conducting a FYR and preparing the associated FYR report and; (3) guidance on emerging issues.

## Five-Year Review Basics

### Why is a Five-Year Review Required?

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §121(c) and The National Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 300.430(f)(4)(ii), a FYR is required if a remedial action (RA) is selected that results in hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use/unrestricted exposure (UU/UE).

### What are the Objectives of the Five-Year Review?

The objective of the FYR is to evaluate the implementation and performance of a remedy to:

- (1) document post-Record of Decision (ROD)/decision document (DD) cleanup progress;
- (2) assess if the remedy is functioning as intended;
- (3) identify issues that affect protectiveness and recommendations to address issues;
- (4) document protectiveness determinations and statements for each site.

Additionally, the Department of Navy (DON) may use the FYR process to support the continued evaluation and optimization of remedies. For sites where the remedy is not making adequate progress, the FYR report should recommend optimization and allow adequate time to complete optimization reviews prior to the next FYR.

### Where Do Five-Year Reviews Fit in the CERCLA Process?

Figure 1 illustrates where FYRs fit into a CERCLA process. The start of the first FYR period is triggered by the on-site mobilization date for sites that require a remedial action construction (RA-C) phase. For remedies that do not require a RA-C phase, the start of the first FYR period is triggered by the signature date of the ROD/DD. For example, a monitored natural attenuation (MNA) remedy without additional well installation does not require construction (i.e., RA-C); therefore, the first FYR is triggered by the signature date of the ROD/DD. The first FYR report documenting protectiveness is to be completed and signed within five years of the trigger date for that site(s). Subsequent FYR reports shall be signed no later than five years after the signature date of the previous FYR report. Once a site achieves site closeout (SC) with UU/UE, a FYR is no longer required for that site.

## Protectiveness Determinations

- **Protective:** The remedy is protective; risks currently under control and anticipated to be under control in the future.
- **Short-Term Protective:** The remedy is currently protective but for the remedy to be protective in the long term, action is needed to address an issue affecting future protectiveness.
- **Will be Protective:** Construction activities are ongoing and the remedy is expected to be protective when completed and there are no current exposure pathways that could result in unacceptable risk.
- **Not Protective:** Human and/or ecological risks are currently not under control.
- **Protectiveness Deferred:** There is insufficient information to answer technical assessment questions A, B and C and insufficient documentation to conclude risks are currently under control.

# FIVE-YEAR REVIEW OVERVIEW

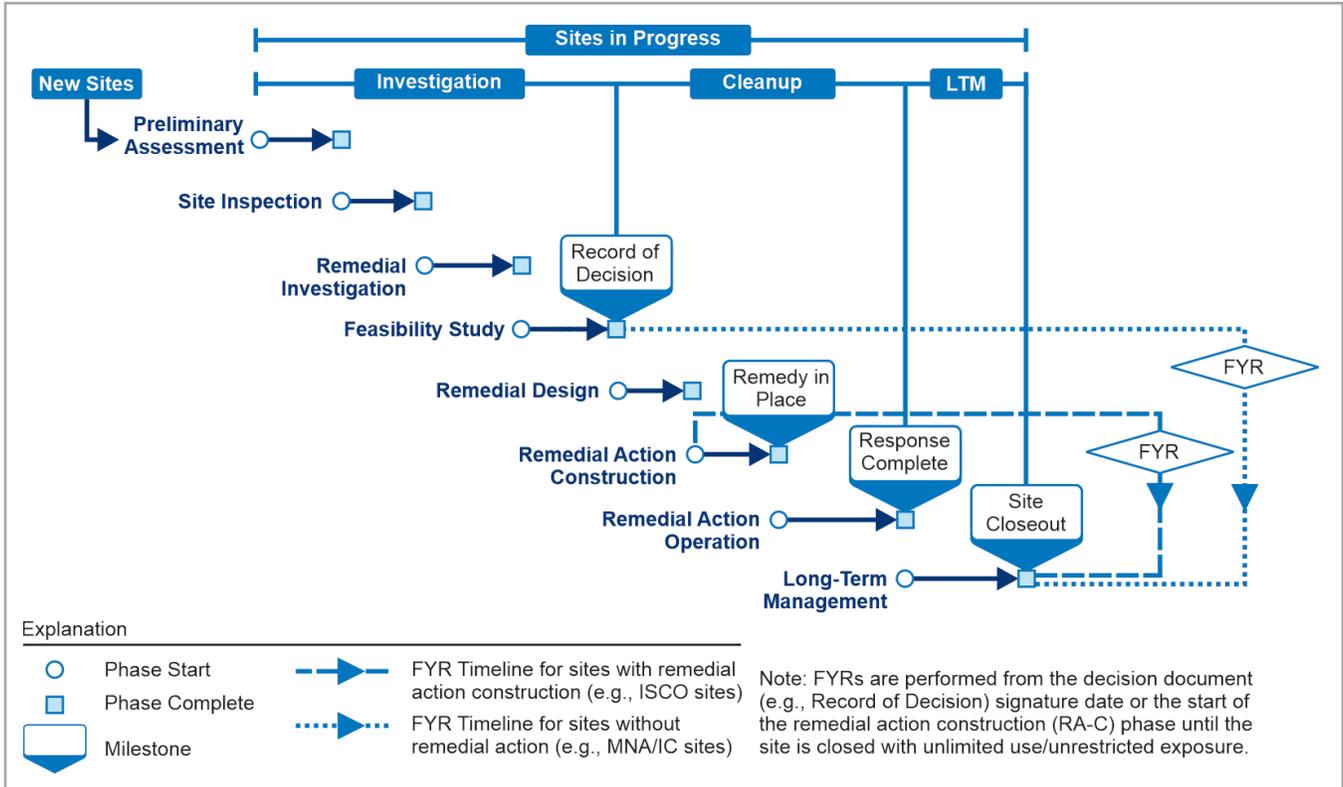


Figure 1: Five-Year Reviews in the CERCLA Process

## Five-Year Review Overview

### Conducting a FYR:

When conducting a FYR, the first step is to put together an integrated Project Team, with disciplines typically consisting of environmental engineering, hydrogeology, and risk assessment. The schedule needs to consider data collection, report preparation, and regulatory review requirements. Typically, this process needs to begin between 18 and 24 months before the signature due date.

It is important to ensure the appropriate level of community outreach, with interviews conducted with key individuals who are familiar with installation/site activities, but not responsible for the cleanup. Site inspections should be performed using the [United States Environmental Protection Agency \(USEPA\) guidance checklist](#) customized for the remedies in place at the site.

### Preparing a FYR Report:

The [2016 USEPA Recommended Template](#) is the recommended format for FYR report preparation. Internal draft reports are required to be submitted to the Navy's Quality Document Review (QDR) or Base Realignment and Closure (BRAC) document review process for subject matter expert (SME) review. RPMs may also want to engage SMEs earlier in the process to provide assistance.



# TECHNICAL ASSESSMENT QUESTIONS & PROTECTIVENESS



## Assessing the Remedy:

The following technical assessment questions need to be answered for each site covered under the FYR to make the protectiveness determination:

Technical Assessment Question	Action To Be Taken
<b>Question A</b>	
Is the remedy functioning as intended by the DDs?	Evaluate remedy performance information (e.g., O&M data, groundwater monitoring results, site inspection observations, etc.) relative to the RAOs detailed in the DD.
<b>Question B</b>	
Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid?	Review the CSM, including exposure pathways and COCs, promulgated standards, and assumptions used in the DD relative to the current CSM and standards to assess if there are any changes that would impact protectiveness.
<b>Question C</b>	
Has any other information come to light that could call into question the protectiveness of the remedy?	Address any other new information that has not been discussed under Questions A or B, such as changes in site conditions, including land use, flood boundaries, and/or reoccurring extreme weather events.

COCs – chemicals of concern; CSM – conceptual site model; O&M – operation and maintenance; RAOs – remedial action objectives.

The 2001 [USEPA Comprehensive Five-Year Review Guidance](#) provides additional detail on what data and information should be considered when answering these questions.

## Determining Remedy Protectiveness:

The flow chart in Figure 2 provides guidance in determining the remedy protectiveness for each site. See sidebar on Page 1 for more details.

## Developing Protectiveness Statements:

The FYR should provide a clear presentation of facts and evaluations that justify the protectiveness determination through answering the technical assessment questions. The USEPA has prepared a [Clarifying the Use of Protectiveness Determinations for CERCLA FYRs](#) memorandum for additional information.

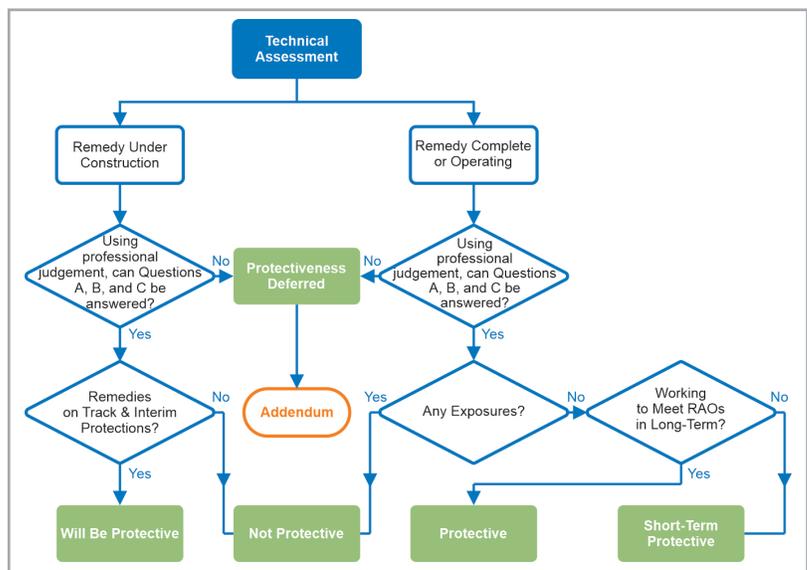


Figure 2: Flowchart to Determine Remedy Protectiveness

The RPM should plan for appropriate data collection upfront and throughout the FYR process to ensure that the technical assessment questions can be answered and to demonstrate that the remedy continues to be 'Protective.' For any site where the remedy is determined to be other than 'Protective' or 'Will Be Protective,' the FYR shall identify the issues and recommendations necessary for the remedy to be 'Protective' in the long-term. Well-written recommendations will provide a path forward for the RPM to address all issues. Only if Questions A, B, and C cannot be answered using significant professional experience and judgement, then 'Protectiveness Deferred' shall be selected and a FYR Amendment completed within one year of the FYR signature, per Navy Policy.



# ADDRESSING EMERGING ISSUES



## Addressing Emerging Issues

As the practice of environmental science and engineering evolves, novel issues are revealed that must be addressed during the FYR process. This section highlights some of these issues that are current at the time of this fact sheet.

### Should ecological risk due to chemicals of emerging concern be assessed in a FYR?

As with evaluating other chemicals, exposure to an environmental media (e.g., soil), a known chemical concentration in that media, and a receptor (i.e., either ecological or human) must be present to evaluate the potential for an unacceptable risk. If additional data have been gathered since the last FYR and a complete pathway is present for ecological receptors at a site(s), an ecological evaluation should be performed. However, RPMs are cautioned to obtain technical input from Navy SMEs before including effects levels/screening levels as part of this evaluation. This will help ensure that appropriate screening levels considering the state of science relative to these chemicals of emerging concern (e.g., PFAS) are used for the evaluation. For example, since there are currently no promulgated levels for assessing ecological endpoints (e.g., ambient water quality criteria [AWQC]) for any PFAS, it is important to recognize that an exceedance of a literature-based screening value does not mean that ecological risks are present that could impact the protectiveness of a remedy. As with a typical screening level ecological risk assessment (SLERA), an exceedance of a screening level indicates only that a potential for risk could be present and a closer look may be warranted using the issues/findings and recommendations via the FYR.

### When will DON state that substantive action will be taken at closed landfills in tidal areas considering rising sea levels?

If current site data demonstrate changing site conditions (e.g., due to sea level rise), then its impacts should be assessed (e.g., through review of remedy design and construction) under Question C of the FYR. If site data do not demonstrate current changing site conditions, then stating in Question C that the Navy will 'address it at that time or in the future' is an appropriate response.

## References

The following documents, websites, and training presentations are provided as additional references for preparing FYRs.

- Naval Facilities Engineering Systems Command (NAVFAC). 2021. Remediation Innovative Technology Seminar (RITS): Five-Year Review Process – Lessons Learned. June/July
- NAVFAC. 2018. [Open Environmental Restoration Resources \(OER2\) Webinar: Five Year Review Refresher](#). October.
- NAVFAC. 2014. [Remedial Action Completion in the Navy's Site Closeout Process](#). November.
- NAVFAC. 2011. [Policy for Conduction Five-Year Reviews](#). June 7.
- Department of Navy. 2018. [Environmental Restoration Program Manual](#).
- United States Environmental Protection Agency (US EPA). 2021. [Superfund: Five Year Reviews](#).
- US EPA. 2021. [Five-Year Review of Federal Facility Cleanups](#).
- US EPA. 2016. [Five-Year Review Recommended Template](#). January.
- US EPA. 2012. [Clarifying the Use of Protectiveness Determinations for CERCLA FYRs](#). OSWER 9200.2-111, September.
- US EPA. 2012. [Assessing Protectiveness at Sites for Vapor Intrusion](#). OSWER 9200.2-154, December.
- US EPA. 2011. [Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance"](#). OSWER 9355. 7-18, September.
- US EPA. 2009. [Five-Year Reviews, Frequently Asked Questions \(FAQs\) and Answers](#). September.
- US EPA. 2001. [Comprehensive Five-Year Review Guidance](#). OSWER 9355.7-03B-P, June.
- US EPA. CLU-IN Training: [Federal Facility Five-Year Reviews Training](#). Mar 2017 & Aug 2020.

