



# POST ACTIVE REMEDIATION MONITORING (PARM) AND NO FURTHER ACTION PROPOSAL (NFAP)

**James Treadwell**

Division of Waste Management / Petroleum Restoration Program  
Florida Department of Environmental Protection

Tallahassee, Florida | April 28-30, 2026



# POST ACTIVE REMEDICATION MONITORING (PARM)

PARM and NFAP



# POST ACTIVE REMEDIATION MONITORING

## Underground Injection Control (UIC):

- Before beginning PARM, ensure that active remediation is no longer occurring.
- While this is simple for a mechanical system, chemical injections are not as straightforward.
- After injections are completed, the injected material may be active for some time.
- Do baseline sampling before injections and monitor UIC parameters for return to Cleanup Target Levels (CTLs) or baseline levels.



# POST ACTIVE REMEDIATION MONITORING

## Review Historical Data:

- Before beginning PARM, review data for soil contamination that needs to be resolved, and for Monitor Wells and parameters that need to be resampled.
- Be sure to look at historical records for exceedances that may not be in recent tables, especially for contaminants like lead, Ethylene dibromide (EDB), etc.
- Do not wait until the end of PARM or Well Abandonment to do data review.



# POST ACTIVE REMEDIATION MONITORING

## Review Historical Data:

- To be considered valid, lab samples must meet the appropriate Cleanup Target Level (CTL) or approved Practical Quantitation Limit (PQL).
- For example, a soil sample yielding 0.05 U mg/kg (non-detect) for benzene is inconclusive and cannot be used without resolution, because the Soil Cleanup Target Level (SCTL) for benzene is 0.007 mg/kg.



# POST ACTIVE REMEDIATION MONITORING

## Confirmation Sampling:

- Historical soil contamination must be resolved and documented.
- Contaminated soil may have been excavated.
- Replacement soil borings may be required. Soil sampling may include Synthetic Precipitation Leaching Procedure (SPLP) and/or Total Recoverable Petroleum Hydrocarbon (TRPH) speciation.



# POST ACTIVE REMEDIATION MONITORING

## Confirmation Sampling:

- Replacement soil borings must take into account the location and depth of previous contamination and consider OVA readings as applicable.
- Replacement borings are usually taken at the same location and depth as the previous samples.
- Other locations may be necessary on a site-specific basis.



# POST ACTIVE REMEDIATION MONITORING

## Confirmation Sampling:

- Some professional judgement or lines of evidence may be required, especially if previous locations are inaccessible.
- Communicate with DEP to assure agreement with the judgement or lines of evidence.
- If contamination cannot be resolved, conditional closure may be the only option.



# POST ACTIVE REMEDIATION MONITORING

## Groundwater Sampling:

- Ch 62-780, F.A.C. generally requires a minimum of 4 quarters of PARM groundwater sampling, with the last 2 meeting No Further Action (NFA) criteria in *representative* locations, including following excavations.
- For *interim* source removals, at least 2 sampling events meeting NFA criteria are required.
- If groundwater contamination did not exist prior to remediation, a minimum of one groundwater sampling event is required.



# NO FURTHER ACTION PROPOSAL (NFAP)

PARM and NFAP



# NO FURTHER ACTION PROPOSAL

## Requirements:

- A recommendation for No Further Action (NFA) must include how NFA criteria are met for all media, including groundwater and soil leachability and direct exposure, with all applicable tables and maps.
- Soil and groundwater plumes must be delineated.
- The NFA or NFAC proposal must be sealed by a Florida registered professional.



# NO FURTHER ACTION PROPOSAL

## Requirements:

- For conditional closure, the NFA package must include soil and groundwater plume maps.
- The groundwater plume must be demonstrated to be stable or shrinking with at least one year of monitoring.
- Soil contamination may require an Engineering Control (EC), such as 2' of clean soil or an impervious surface to prevent rainwater infiltration.
- Site maps should show contaminant plumes in relation to the restricted areas, and groundwater plumes typically require an exclusion buffer.



# NO FURTHER ACTION PROPOSAL

## Engineering Control



Source: James Treadwell



# NO FURTHER ACTION PROPOSAL

## Unsaturated Zone:

- Per DEP guidance for closure decisions, the depth to water at the final sampling event will generally define the unsaturated zone.
- Soil above the water table at this time must meet SCTLs. Please include depth to water tables in the closure review package.
- Neither smear zone nor capillary fringe appear in Chapter 62-780, so exercise caution when discussing these in closure decisions.



# THANK YOU

**James Treadwell**

Division of Waste Management / Petroleum  
Restoration Program  
Florida Department of Environmental Protection

Contact Information:

850-245-8862

[James.Treadwell@floridadep.gov](mailto:James.Treadwell@floridadep.gov)