

# Guidance for Preparation of Soil Management Plans

(subsection of Remedial Action Plan)  
Florida Department of Environmental Protection  
Division of Waste Management  
District and Business Support Program  
Tallahassee, FL  
DRAFT – June 2021

**Commented [A1]:** Or Interim Source Removal Proposal?

## Disclaimer:

This document is only intended as guidance when preparing a Soil Management Plan (SMP) as part of the [Interim Source Removal Proposal \(ISRP\)](#) or Remedial Action Plan. The guidance provides suggested topics to be included in the SMP. The SMP will be evaluated for completeness as it relates to managing site soil activities that will enable [an ISRP approval or a Remedial Action Plan Approval Order](#) to be issued by FDEP. Soil activities to be managed include removal, reuse, or importing soils and all associated activity. Nothing in this guidance supersedes any Federal, State, or Local requirements; nor does it create any new requirements. All applicable Department rules must still be adhered to.

**Commented [A2]:** Verification Sampling and Analysis Plan considered a "new requirement"?

**Purpose:** This document is intended to provide guidance on what type of content should be included in a soil management plan. The expectation is that these topics will be discussed in appropriate detail either in a stand-alone Soil Management Plan or as a section in the Remedial Action Plan / Interim Source Removal Plan. All plans should be approved prior to any removal actions occurring.

Developing a Soil Management Plan[JMP1]

A Soil Management Plan should be developed anytime soils are excavated, stockpiled, mixed with other site soils, or soil is imported for use in blending, and then the soils are reused on a site. The SMP should be comprehensive and cover all soil management activities. A SMP is intended to document how site soils are managed to prevent contamination of soils that were found not to be impacted as part of the initial site assessment. The SMP should include location figures of where removal actions are planned, the depth of removal actions, if groundwater will be encountered, where stockpiles and soil mixing activity are planned, how excavated soil will be moved to the stockpile area, how stockpiles will be managed – including what impervious surface will the stockpiled material be placed on, what stormwater/erosion safeguards will be put in place, and how will the stockpiles be managed to prevent dust issues; how will soils be mixed, any sampling that will be conducted for the stockpiles, how will contaminated soils be transported on site, and how will mixed soils be transported on site.

Documentation needs to be provided for all soils disposed off-site (name of facility, address, volume, what site constituent caused the soils to be disposed off-site).

The SMP should describe if clean fill will be imported for the purpose of mixing with impacted site soils and subsequently be reused on site. The proposed source of the clean fill and proposed volume imported for blending purposes should be documented and any analysis that was performed for clean certification should be provided.

Elements of a Soil Management Plan

- 1) Summarize history/background of the site.
- 2) If this is a redevelopment project, provide summary of all properties proposed in the redevelopment plan and discuss land use before and after (if known). Will the redevelopment occur in phases? What properties are proposed in each phase?
- 3) Provide site definition of any designated Exposure Units (EUs) and Decision Units (DUs); discuss variations in procedures and methodology for different EUs and DUs.
- 4) Initial Assessment Summary:

**Commented [A3]:** Placement on an impervious surface is often impractical in the field. Placement on visqueen is problematic with heavy equipment operation – in my experience the visqueen is often damaged during pile movement. I think there should be a provision that stockpiles don't need to be on an impervious surface as long as they are within the area of contamination and appropriately covered.

**Commented [A4]:** I have a bit of a concern with this being in the "Plan" rather than the "completion report". This mixes pre- and post-removal requirements. Typically, the source removal plan or RAP is submitted before the project has been bid for implementation. Often the landfill isn't selected until the bidding and may in fact change based on trucking costs or some other factor. I think it's more appropriate to note that any soils requiring off-site disposal will be sent to a permitted facility and leave it at that.

**Commented [A5]:** As above, at a minimum add proposed, but this information likely won't be known until the job is actually bid and shouldn't be included in the "Plan" but rather documented in the completion report.

**Commented [A6]:** Not defined in 62-780, F.A.C., or 376.301, F.S., or 376.79, F.S.  
TG: Consider a definition section within the guidance?

- a) Soil contaminants of concern (COCs) and target soil cleanup target levels (SCTLs) or justification of alternative SCTLs (ASCTLs). Soil delineation must be complete for the entire site for the development of a comprehensive soil management plan.
- b) Description of depth to water table, leaching potential and any groundwater impacts prior to soil excavation activity.
- c) If soil reuse is planned, are the soil concentrations suitable for achieving the appropriate SCTL(s) after mixing/blending soil. (Note: any soil reuse on the site will trigger stockpile sampling and tracking or verification sampling procedures).

**Commented [A7]:** How would this affect the case of the "interim source removal plan"?

**Commented [A8]:** JP addition

5) Soil Remedial Action Summary.

- a) Soil Excavation or Earthwork:
  - i) Pre-excavation delineation ~~and verification~~ sampling (laterally & vertically), and excavation area locations; or, existing condition sampling (type/increments/number/locations) and cut line decisions, step out process, sampling methodology, locations, and soil sample intervals should be documented.
  - ii) Describe earthwork approach, including cut and fill analysis, areas of soil stockpile generation and areas that will receive contaminated soils and areas that will receive clean soils. Provide an estimate of volume of contaminated soils to be taken off-site.
  - iii) Summarize transportation (on and off site) plan for moving excavated soils to stockpile areas. Describe safeguards employed to prevent cross contamination from the stockpile(s).
  - iv) Describe all applicable stormwater/dust/sediment/erosion/odor controls.
  - v) Will clean fill be imported to the site to fill excavation? If so, provide the source facility name and address. (Note: It is the Person Responsible for Site Rehabilitation's (PRSR) responsibility to have any analysis of the clean fill to certify the imported soil is clean. FDEP does not regulate clean fill and as such only recommends that the soil be tested prior to use on the site.)

**Commented [A9]:** JP

**Commented [A10]:** JP: Dust is often a big issue during soil management since it affects neighboring property owners. Dust control/air monitoring requirements need to be described in more detail, in a dedicated section.

**Commented [A11]:** See prior comments, may not be known at the time of plan preparation.

b) Stockpiling Procedures:

- i) ~~Note - Stockpile sampling is at the discretion of the PRSR. FDEP will use in situ verification sampling, not stockpile sampling results, to determine if re-use cleanup target levels are met.~~ should be conducted in accordance with FDEP's Guidance for Soil Mixing and Blending Activities.
- ii) Stockpile site locations should be documented; describe wet soil handling procedures.

**Commented [A12]:** JP: What about Chapter 62-713 as a model for stockpile sampling? Or Miami-Dade DERM clean soil guidance?

- iii) Describe stormwater/dust/sediment/erosion/odor controls to prevent impacted soil from contaminating non-impacted portions of the site.
- iv) If conducted, summarize sampling procedures: number of samples; collection depth of samples.
- v) Off-Site Disposal – If impacted soils will be removed from site and disposed at an appropriate permitted facility. It is suggested to include name of facility, address and permit information, if applicable. Also, the volume will need to be tracked and documented. Note: all off-site disposal is the responsibility of the PRSR and PRSR will arrange with disposal facility for requirements for sampling and analyses.

c) **Soil Reuse – Soil mixing/ blending**

i) Note- any soil mixing/blending activity must always be conducted within the footprints of the site impact soil areas; Also, sampling of stockpiled mixed/blended soil is at the discretion of the PRSR. ~~FDEP will not base any suitability for re-use decisions on stockpile soil sampling results.~~

ii) Describe all applicable stormwater/dust/sediment/erosion/odor controls.

iii) If sampling is conducted, summarize the blending confirmation/stockpile sampling procedures and the decision process for re-blending.

iv) If 95% UCL process was used, provide detailed calculations.

v) If Incremental Sampling Methodology (ISM) was used for any aspect of collecting soil samples provide detailed description of process used, including sample locations. Note: methodology should follow accepted ISM guidance.

vi) Note – FDEP allows imported clean fill to be used in conjunction with the soil mixing process. It is the responsibility of the PRSR to sample imported soil to ensure that this soil is not contaminated. The source of this soil should be documented. Additionally, the site locations where the soil is placed should be documented.

~~vii) The reuse of soil through soil mixing/blending soils to meet appropriate SCTLs will require a Verification Sampling and Analysis Plan to be include with the SMP.~~

d) **Placement of Blended/Mixed Soils:**

i) Describe how mixed soils are transported from stockpile areas to placement areas.

ii) If soil is reused at site, verification sampling needs to be conducted within the exposure units that the blended/mixed soil was placed.

iii) All areas of the site where reuse occurred needs to be thoroughly documented.

**Commented [A13]:** Instead of separate/duplicate details outlined here, should this simply reference the "Guidance for Soil Reuse Involving Soil Mixing/Blending Activities at 62-780, F.A.C. Sites"?

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**Commented [A14]:** JP: Sample frequency? Isn't this redundant? This should be a section in every Soil Management Plan, not a separate plan.

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**Commented [A15]:** TG: Each individual lot of a residential development? What would the EU be for a multi-family development?

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~~iv) Describe the verification sample process including sample depth intervals, locations/number of samples; size of exposure unit where verification sampling is conducted.~~

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~~v)iii) Summarize decision process for soil replacement within exposure unit if the verification sample results exceed the applicable siteresidential direct exposure soil cleanup target levels.~~

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~~vi)iv) Describe the final cover including any proposed engineering controls.~~

6) Summarize construction **dewatering procedures**, if applicable.

**Commented [A16]:** TG: Does this need to be part of the SMP? Not really related to soil management.

~~7) If 95% UCL process was used, provide detailed calculations.~~

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~~8)7) Describe field verification procedures, if applicable – example XRF; planned procedures and methodology; calibration procedures; decision process for laboratory analytical sampling; and, confirmation of screening process.~~

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~~9)8) Describe proposed institutional controls for placement of soils greater than siteresidential SCTLs; proposed engineering controls; type; and, locations.~~

~~10) If Incremental Sampling Methodology (ISM) was used for any aspect of collecting soil samples provide detailed description of process used, including sample locations. Note: methodology should follow accepted ISM guidance.~~

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~~11)9) Provide any contingency plans, if applicable - for example -air monitoring and dust control/mitigation.~~

**Definitions:**

**Commented [A17]:** Below are a list of acronyms – should definitions be included here?

ASCTL: Alternative Soil Cleanup Target Level

COC: Contaminant of Concern

**DU: Decision Unit**

EU: Exposure Unit

ISM: Incremental Sampling Methodology

PRSR: Person Responsible for Site Rehabilitation

SCTL: Soil Cleanup Target Level

UCL: Upper Confidence Limit

XRF: X-Ray Fluorescence

**Commented [A18]:** Not defined in 62-780, F.A.C., or 376.301, F.S., or 376.79, F.S.

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**Subject:** RE: Draft ICPG Updates and New Draft Guidance - comments

Good afternoon Brian,

FPL offers the following comments to the draft ICPG documents

**Draft Guidance for Preparation of Soil Management Plans**

1. Will the language for definitions (e.g. Decision Unit, Exposure Unit, etc.) be provided for review?

**Draft Guidance for Soil Reuse Involving Soil Mixing/Blending Activities**

1. Seeking clarification on whether this guidance is applicable to all development, including commercial and industrial.
2. The definition for contaminated site included in this document is inconsistent with the definition in 376.301 F.S. (which is also referenced in Chapter 62-780).
2. Seeking clarification as to whether the residential direct exposure requirement is applicable to just the top two feet of blended soil or does it extend deeper than 2 feet below land surface (ft-bls)?
3. Seeking clarification as portions of the document reference that blended soils meet the **lowest applicable SCTL** for the site, while in other portions of the document it references blended soils meeting **residential SCTLs**. Will blended soils need to meet the lowest applicable SCTLs or residential SCTLs?

Thank you.

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**Purpose:** This document is intended to provide guidance on what type of content should be included in a soil management plan. The expectation is that these topics will be discussed in appropriate detail either in a stand-alone Soil Management Plan or as a section in the Remedial Action Plan / Interim Source Removal Plan. All plans should be approved prior to any removal actions occurring.

- 1) Summarize history/background of the site.
- 2) If this is a redevelopment project, provide summary of all properties proposed in the redevelopment plan and discuss land use before and after. Will the redevelopment occur in phases? What properties are proposed in each phase?
- 3) Provide a figure depicting the remedial units (RUs; i.e., source removal areas and/or soil mix/blend areas) and site definition of any designated Exposure Units (EUs)/and Decision Units (DUs). Discuss variations in procedures and methodology for the different EUs and DUs units.
- 4) Initial Assessment Summary:
  - a) Soil contaminants of concern (COCs) and target soil cleanup target levels (SCTLs) or justification of alternative SCTLs (ASCTLs). Generally, on-site soil assessment should be complete, for the entire site or development phase, prior to preparation of the soil management plan. However, for source removal areas, delineation may be completed post-excitation using sidewall and bottom samples. Further, recognizing the potential constraints with obtaining approval to collect off-site samples, the soil management plan may be developed prior to completion of off-site delineation. ~~Soil delineation must be complete for the entire site for the development of a comprehensive soil management plan.~~
  - b) Description of depth to water table, including the October high water table elevation, leaching potential and any groundwater impacts prior to soil excavation activity.
  - c) If soil reuse is planned, are the soil concentrations suitable for achieving the appropriate SCTL(s) after mixing/blending soil. (Note: any soil on-site reuse on the site of mixed/blended soil will trigger verification sampling procedures).
- 5) Soil Remedial Action Summary.
  - a) Soil Excavation:
    - i) Pre-excavation delineation and verification sampling (laterally & vertically), and excavation area locations; or, existing condition sampling (type/increments/number/locations) and cut line decisions, step out process, sampling methodology, locations, and soil sample intervals.
    - ii) Summarize transportation (on and off site) plan for moving excavated soils to stockpile areas. Describe safeguards employed to prevent cross contamination from the stockpile(s).

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**Commented [A1]:** Inserted to clarify that un-impacted soil, which is demonstrated to meet the applicable SCTLs/ASCTLs during the SAR phase, does not require verification testing if re-located.



- iii) Describe all applicable stormwater/dust/sediment/erosion/odor controls.
  - iv) Will clean fill be imported to the site to fill excavation? If so, provide the source facility name and address. (Note: It is the Person Responsible for Site Rehabilitation's (PRSR) responsibility to have any analysis of the clean fill to certify the imported soil is clean. FDEP does not regulate clean fill and as such only recommends that the soil be tested prior to use on the site.)
- b) Stockpiling Procedures:
- i) Note - Stockpile sampling is at the discretion of the PRSR. FDEP will use in-situ verification sampling, not stockpile sampling results, to determine if re-use cleanup target levels are met.
  - ii) Stockpile site locations should be documented; describe wet soil handling procedures.
  - iii) Describe stormwater/dust/sediment/erosion/odor controls to prevent impacted soil from contaminating non-impacted portions of the site.
  - iv) If conducted, summarize sampling procedures: number of samples; collection depth of samples.
  - v) Off-Site Disposal – If impacted soils will be removed from site and disposed at an appropriate permitted facility. It is suggested to include name of facility, address and permit information, if applicable. Also, the volume will need to be tracked and documented. Note: all off-site disposal is the responsibility of the PRSR and PRSR will arrange with disposal facility for requirements for sampling and analyses.
- c) Soil Reuse – Soil mixing/ blending
- i) Note- ~~any initial~~ soil mixing/blending ~~activity must always~~ shall be conducted within the footprints of the site impact soil areas. However, if the mixed/blended soil is reused in an un-impacted area of the site and the verification testing documents that the applicable SCTLs/ASCTLs were not achieved during the initial mixing/blending, then subsequent mixing/blending may occur in place, followed by subsequent verification testing. Also, sampling of stockpiled mixed/blended soil is at the discretion of the PRSR. FDEP will not base any suitability for re-use decisions on stockpile soil sampling results.
  - ii) Describe all applicable stormwater/dust/sediment/erosion/odor controls.
  - iii) If sampling is conducted, summarize the blending confirmation sampling procedures and the decision process for re-blending.

**Commented [A2]:** This was added to clarify that if mixed/blended soil, which is reused in un-impacted areas of the site, fails the SCTLs upon verification testing at the reuse location, then it does not need to be excavated and hauled back to an impacted area of the site for further mixing/blending.

- iv) Note – FDEP allows imported clean fill to be used in conjunction with the soil mixing process. It is the responsibility of the PRSR to sample imported soil to ensure that this soil is not contaminated. The source of this soil should be documented. Additionally, the site locations where the soil is placed should be documented.
- v) The reuse of soil through soil mixing/blending soils to meet appropriate SCTLs will require a Verification Sampling and Analysis Plan to be include with the SMP.
- d) Placement of Blended/Mixed Soils:
  - i) Describe how mixed soils are transported from stockpile areas to placement areas.
  - ii) If soil is reused at on-site, verification sampling ~~needs to~~ shall be conducted within the ~~exposure units~~ EUs/DUs that the blended/mixed soil was placed.
 

Note – verification testing is not required for reuse of soil, including deep, subsurface material excavated from beneath the water table, which has been demonstrated to meet the applicable SCTLs/ASCTLs through in-situ soil sampling during the site assessment phase. Furthermore, for mixed/blended soil, if in-situ verification testing demonstrates that the SCTLs/ASCTLs have been met, additional verification testing is not required if the soil is subsequently moved to another on-site location.
  - iii) All areas of the site where reuse occurred ~~needs~~ to be thoroughly documented.
  - iv) Describe the verification sample process including sample depth intervals, locations/number of samples; size of exposure unit where verification sampling is conducted.
  - v) Summarize decision process for soil replacement within exposure unit if the verification sample results exceed the residential direct exposure soil cleanup target level.
  - vi) Describe the final cover including any proposed engineering controls.
- 6) Summarize construction dewatering procedures, if applicable.
- 7) If 95% UCL process was used, provide detailed calculations.
- 8) Describe field verification procedures, if applicable – example XRF; planned procedures and methodology; calibration procedures; decision process for laboratory analytical sampling; and, confirmation of screening process.
- 9) Describe proposed institutional controls for placement of soils greater than residential SCTLs; proposed engineering controls; type; and, locations.
- 10) If Incremental Sampling Methodology (ISM) was used for any aspect of collecting soil samples provide detailed description of process used, including sample locations. Note: methodology should follow accepted ISM guidance.

11) Provide any contingency plans, if applicable - for example -air monitoring and dust control/mitigation.

**Definitions:**

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