SOIL REUSE GUIDANCE FOR MIAMI-DADE COUNTY

This guidance document provides general guidelines for obtaining soil classification letters from DERM for the purpose of evaluating reuse options.

Applicability

This guidance is applicable to the reuse of soil within Miami-Dade County and is consistent with the Chapter 24, Code of Miami-Dade County ("the Code") risk based corrective action (RBCA) provisions.

Soil Classification Letters

DERM will issue soil classification letters upon request, but will not approve specific soil reuse locations. It is the responsibility of the generator and receiver to reuse the soil in accordance with the conditions set forth in this guidance and all applicable federal, state and local regulations. The following information shall be submitted to DERM to obtain a soil classification letter:

1. source location of the soil, including information such as the site address and any DERM permit numbers;

2. information regarding potential sources of contamination present at the source location and, based upon this information, a list of potential contaminants of concern (COCs), as described in General Comment No. 2;

3. amount of soil to be reused (in cubic yards or tons); and

4. appropriate analytical results (e.g., total, SPLP, TCLP, TRPH speciation, etc.) from a sufficient number of samples (see Soil Reuse Options and General Comment No. 1 below), including chain of custody forms, original laboratory records, a summary of the sampling protocol, and a project map with sampling locations. Be advised that all analytical results (except SPLP and TCLP results) shall be reported on a dry weight basis.

Soil Re-Use Options

Based upon the analytical results, the reuse options shall be determined in accordance with the guidelines that follow.

1. Clean Soil:

   a. Soil is classified as clean soil if concentrations of the COCs are less than or equal to one or more of the following:

      i. the practical quantitation limits (PQLs),

      ii. the DERM-established background concentrations in the following table:

Chemical Name	Natural Background Concentration (mg/kg)		Chemical Name	Natural Background Concentration (mg/kg)
Arsenic	1.2		Lead	26
Aluminum	2656		Manganese	55
Barium	7		Mercury	0.08
Cadmium	0.1		Nickel	2.1
Chromium	6.8		Selenium*	<0.45
Copper	4.1		Silver*	<0.025
Iron	2176		Zinc	12

Note: This table is not a list of required sampling parameters (please see General Comment No. 2 of this guidance).

* The data for selenium and silver were not analyzed statistically because all of the selenium results were below the detection limit and silver was detected in only one sample.

      iii. DERM-approved, site-specific natural background concentrations within the vicinity of the source site established using the Natural Background Guidance (RBCA Guidance No. 7C).

   b. Clean Soil may be reused anywhere within Miami-Dade County without restrictions. Be advised, however, that the applicable permits and approvals (e.g, DERM permit, Planning and Zoning approval, etc.) must be obtained prior to filling operations in wetlands (e.g., dredge and fill permit) and surface waters (e.g., lakefill permit).

2. Residential Soil:

   a. Soil is classified as residential soil if concentrations of the COCs are less than or equal to the residential direct exposure soil cleanup target levels (CTLs), the groundwater leachability-based soil CTLs, the fresh surface water leachability-based soil CTLs, and the marine surface water leachability-based soil CTLs

specified in Table 2 of the RBCA ordinance (Section 24-11.1(2)(E)(5)(b) of the Code).

As appropriate, the direct exposure soil CTLs shall be adjusted to account for additive effects of multiple contaminants (Section 24-11.1(2)(J)(1)(e) of the Code). The DERM Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 24, Code of Miami-Dade County, Florida, October 20, 2000 ("Technical Report") provides guidance for addressing additive effects.

In addition, the following RBCA options are available:

i. Direct leachate testing may be conducted when the groundwater, fresh surface water, or marine surface water leachability-based soil CTLs specified in Table 2 of the RBCA ordinance are exceeded (see Section 24-11.1(2)(E)(2) of the Code). Direct leachate testing shall be performed using USEPA Method 1312, Synthetic Precipitation Leaching Procedure (SPLP) or, if waste oil is present, USEPA Method 1311, Toxicity Characteristic Leaching Procedure (TCLP). If the leachate test results are less than or equal to the groundwater, fresh surface water and marine surface water CTLs specified in Table 1 of the RBCA ordinance (Section 24-11.1(2)(E)(5)(a) of the Code), then the leachate test results shall be utilized in lieu of the leachability-based soil CTLs. Be advised, however, that the leachate test results do not replace the residential direct exposure soil CTLs.

ii. Alternative soil CTLs for TRPH may be derived based upon the site-specific composition of TRPH (see Section 24-11.1(2)(E)(3)(d) of the Code, Appendix C of the Technical Report and RBCA Guidance No. 7D).

b. Residential Soil may be reused, provided that the generator and receiver of the soil comply with the following provisions set forth in Chapter 24 of the Code:

i. Causing or allowing a nuisance is prohibited by the Code; therefore, Residential Soil that exhibits nuisance characteristics (e.g., soil that has an offensive odor) shall not be reused.

ii. Residential Soil shall not be reused within surface water bodies (e.g., lakes, canals, etc.) or ecologically sensitive areas (e.g., wetlands, etc.).

3. Soil that Exceeds the Residential Soil Criteria

   Soil that exceeds the residential soil criteria shall not be reused and may be subject to the reporting provisions set forth in Section 24-37 of the Code. Disposal of such soil in Miami-Dade County is limited to a Class I landfill. For information regarding disposal at South Dade landfill, contact Lee Casey, Miami-Dade County Department of Solid Waste Management, at (305) 594-1670. Be advised that reuse or inappropriate disposal of such soil may result in DERM enforcement action.

General Comments

1. The number of composite soil samples shall, generally, be in accordance with the following table:

Volume of Soil (yd^3)	Weight of Soil (tons)	Number of Discrete Samples for Volatile Organic Compounds	Number of Composite Samples for Non-Volatile Compounds
<200	<280	1	1
200 to <1,000	280 to <1,400	3	3
1,000 to <2,000	1,400 to <2,800	5	5
Each additional 1,000 yd^3	Each additional 1,400 tons	1	1

   Be advised, however, that DERM reserves the right to request additional samples if deemed necessary based upon a review of the site-specific data. Likewise, the responsible party may submit a site-specific sampling plan to DERM for approval.

2. Sampling parameters (i.e., COCs) shall be determined on a site-specific basis by considering potential sources of contamination (e.g., gas station, landfill, etc.) and observations made at the time of the soil removal (e.g., petroleum odor, solid waste debris, etc.).

3. The consultant collecting the samples shall perform field sampling work in accordance with Chapter 62-160, Florida Administrative Code (FAC), as amended, Standard Operating Procedures (DEP-SOP-001/01, revised January 1, 2002). The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements.

4. All work shall follow all applicable safety requirements (e.g., OSHA, NFPA, site safety plan, etc.) and the appropriate agencies shall be notified.

5. Soil that is saturated with pure product (free-phase) is not suitable for reuse or landfill disposal and may be subject to the reporting provisions set forth in Section 24-37 of the Code or Rule 62-770.250, Florida Administrative Code (F.A.C.) and the source removal provisions set forth in Section 24-11.1(2)(I)(3) of the Code or Rule 62-770.300, F.A.C.

6. Soil that is classified as a RCRA hazardous waste is not suitable for reuse or for disposal at any landfills or disposal facilities in Miami-Dade County. RCRA hazardous waste characterization by USEPA Test Method 1311, TCLP analyses, followed by the appropriate analysis of the leachate, shall be performed when soil concentrations of the COCs exceed the Total Soil Criteria listed in Table 1 at the end of this guidance. The TCLP results shall be compared to the TCLP Criteria provided in Table 1. Any soil that exceeds the TCLP Criteria or is otherwise classified as a RCRA hazardous waste (e.g., listed waste, etc.) shall be disposed at a permitted hazardous waste treatment, storage, disposal facility in accordance with all applicable regulations.

7. Compliance with the criteria and requirements herein does not relieve the generator or receiver of the soil from any other applicable local, state, or federal rules or requirements.

Note: the Chapter 24 RBCA ordinance, the Technical Report, and the RBCA guidance documents are available at the following address: http://www.miamidade.gov/derm/land/trends_risk_based.asp.

Table 1
Total Soil and TCLP Criteria for Toxicity Characterization
(Note: This table is not a list of required sampling parameters, please see General Comment No. 2 of this guidance)

Contaminant	CAS Number	Total Soil Criteria (mg/kg)	TCLP Criteria (mg/l)
Arsenic	7440-38-2	100	5.0
Barium	7440-39-3	2,000	100.0
Benzene	71-43-2	10	0.5
Cadmium	7440-43-9	20	1.0
Carbon tetrachloride	56-23-5	10	0.5
Chlordane	57-74-9	0.6	0.03
Chlorobenzene	108-90-7	2,000	100.0
Chloroform	67-66-3	120	6.0
Chromium	7440-47-3	100	5.0
Cresol, o-	95-48-7	4,000	200.0
Cresol, m-	108-39-4	4,000	200.0
Cresol, p-	106-44-5	4,000	200.0
Cresol	NA	4,000	200.0
D, 2,4-	94-75-7	200	10.0
Dichlorobenzene, 1,4-	106-46-7	150	7.5
Dichloroethane, 1,2-	107-06-2	10	0.5
Dichloroethylene, 1,1-	75-35-4	14	0.7
Dinitrotoluene, 2,4-	121-14-2	2.6	0.13
Endrin	72-20-8	0.4	0.02
Heptachlor (and it's epoxide)	76-44-8	0.16	0.008
Hexachlorobenzene	118-74-1	2.6	0.13
Hexachlorobutadiene	87-68-3	10	0.5
Hexachloroethane	67-72-1	60	3.0
Lead	7439-92-1	100	5.0
Lindane	58-89-9	8	0.4
Mercury	7439-97-6	4	0.2
Methoxychlor	72-43-5	200	10.0
Methyl ethyl ketone	78-93-3	4,000	200.0
Nitrobenzene	98-95-3	40	2.0
Pentachlorophenol	87-86-5	2,000	100.0
Pyridine	110-86-1	100	5.0
Selenium	7782-49-2	20	1.0
Silver	7440-22-4	100	5.0
Tetrachloroethylene	127-18-4	14	0.7
Toxaphene	8001-35-2	10	0.5
Trichloroethylene	79-01-6	10	0.5
Trichlorophenol, 2,4,5-	95-95-4	8,000	400.0
Trichlorophenol, 2,4,6-	88-06-2	40	2.0
TP, 2,4,5- (Silvex)	93-72-1	20	1.0
Vinyl chloride	75-01-4	4	0.2