DERM Guidance No. 7H
SOIL REUSE GUIDANCE
Revised January 2024
RER-DERM Environmental Monitoring and Restoration Division

SOIL REUSE GUIDANCE FOR MIAMI-DADE COUNTY

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

Applicability

DERM encourages the repurposing of material for beneficial reuse while ensuring that said material is reused in a manner that is protective of human health and the environment. This guidance is applicable to entities or individuals requesting a soil classification determination from DERM to facilitate the beneficial reuse of soils within Miami-Dade County. The guidance is consistent with the provisions of the Miami-Dade County Code (the Code) and is intended to ensure that soils proposed for reuse on or off the property at which they are generated are reused in a manner that will be protective of the end users at the reuse location and will not create ground or water pollution. Please note that the guidance is not intended to address the onsite relocation of soils during normal landscaping and maintenance activities at single family residences nor the relocation of soils generated and reused under impervious surface within the same project corridor in the case of a roadway construction project except if said soils are documented to be contaminated, or display visible, olfactory, or other evidence of contamination. The guidelines detailed herein are applicable to vadose zone soil, as well as soils obtained from below the water table, which are proposed to be beneficially reused.

Please note that the soil reuse guidance does not supersede the provisions of a Contaminated Soil Management Plan approved pursuant to site rehabilitation activities at a contaminated site undergoing cleanup pursuant to Chapter 24 of the Code or pursuant to Chapter 62-780, Florida Administrative Code (FAC).

Soil-like material generated by the sieving/screening of solid waste (i.e., recovered screened material (RSM) as defined in Chapter 62-701, FAC and screened solid waste (SSW)), are considered solid waste except when defined as recovered materials pursuant to Chapter 62-701, FAC and intended for beneficial reuse. RSM and SSW are also subject to this guidance, with the exception that RSM generated at a permitted C&D facility is subject to the Florida Department of Environmental Protection's (FDEP) - Guidelines for the Management of Recovered Screen Material from C&D Debris Recycling Facilities in Florida - dated April 2011.

Soil Classification Letters

DERM will issue soil classification letters upon request. A request for a soil classification letter shall include the following information:

This Guidance supersedes and replaces DERM SWP Guidance No. 1 dated March 22, 2004- and March 2023 "SOIL REUSE GUIDANCE FOR MIAMI-DADE COUNTY"

1. The location at which the soil is generated, including information such as the site address, folio number and any DERM, FDEP, EPA permit numbers (as applicable). If different from the generating location, the above information shall also be submitted for the location at which the material is being stored.

2. Information regarding potential recognized environmental concerns present at the generating location and source location (if applicable) based on the current land use, historical land uses, site, discharge, and release history, etc. The information shall be supported by a Phase I Environmental Site Assessment conducted in accordance with the American Society for Testing and Material (ASTM International) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E1527-21, as may be amended from time to time) or, alternatively, a comparable report. Said information shall provide, at a minimum, the following:

    i. A site description.

    ii. A detailed description of historical and current land use, history of past and present site operations including processes that involve the storage, treatment, use, disposal, processing, or manufacturing of materials that may be potential contaminant sources.

    iii. A summary of known spills or releases of materials, including permitted releases and legally applied products, that may be potential contaminant sources.

    iv. Information regarding current or previous site rehabilitation activities.

Please note that compiling the information above will involve inspection of public records (e.g., files located at DERM, Department of Health, FDEP, etc.), the performance of field reconnaissance, and a review of information such as historical land use records, Sanborn maps, and aerial photographs.

3. A soil characterization report which shall include, at a minimum, the information required below.

    NOTE: For the purposes of soil characterization, the applicant shall submit a site-specific sampling plan to DERM-EMRD for review and approval prior to implementation:

    i. The volume of soil (in cubic yards) for which a reuse classification is being sought.

    ii. A sampling frequency based on Table 1.

    iii. The rationale for determining appropriate and applicable sampling parameters/contaminants of concern (COCs). Determination of the appropriate COC shall account for observations made at the time of the soil removal (e.g., petroleum odor, solid waste debris, etc.) and professional judgement in addition to the site-specific information regarding potential sources of contamination based on the site history (see comment 2 above).

    iv. A scaled site map which indicates the locations (include the GPS coordinates) and proposed depth of sampling.

v. A detailed description of the sampling methodology. Note that the sampling methodology shall assure that the samples are representative of the entire vertical and horizontal extent of the volume of soils proposed for reuse.

vi. A summary table of the analytical results.

Table 1: Sampling Frequency

SAMPLING FREQUENCY

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

STOCKPILE SAMPLING

Each composite sample shall consist of a minimum of 8 subsamples obtained such that the subsamples are representative of the entire horizontal and vertical cross section of each sampling unit. The stockpile shall be divided into sample units corresponding to the number of composite samples required. Within each sampling unit, subsamples shall be collected at various depths and intervals through the vertical and horizontal plane of the material such that the final composite sample is representative of the entire sampling unit. Sampling along the perimeter/surface of the sampling unit only is inappropriate and will not be accepted.

DERM recognizes the challenges inherent in sampling a stockpile and recommends flattening the stockpile to improve accessibility. Alternately, access to the interior of the stockpile may be facilitated via pathways created utilizing heavy machinery.

For multiple stockpiles, each stockpile shall be considered separately when determining the sampling frequency as provided above.

It is recommended to segregate the stockpiles of proposed reuse material from other fill source on the properties (e.g. imported quarry fill) and from spill/releases sources/areas.

IN-SITU COMPOSITE SAMPLING

Samples shall be collected at a frequency corresponding to the cubic yard equivalent indicated in the sampling frequency table above. As an example, 1 composite sample is required to characterize an area 100 ft x 100 ft x 0.5 ft while 3 composite samples would be required for a 100 ft x 100 ft x 2 ft area**.**

ISM SAMPLING

The decision unit and the number of samples shall be determined based on the ISM Guidance (https://ism-2.itrcweb.org/) and the intended reuse of the material.

Notwithstanding the above, DERM reserves the right to request additional samples if deemed necessary based on a review of the site-specific data and information.

vii. Laboratory analytical reports, including chain of custody forms, original laboratory records, appropriate analytical methods, laboratory quality control/quality assurance data, etc. Be advised that all analytical results (except Synthetic Precipitation Leaching Procedure (SPLP) and Toxicity Characteristic Leaching Procedure (TCLP) results shall be reported on a dry weight basis.

viii. The proposed reuse location, including addresses, folio, and intended reuse application.

Soil Re-Use Options

Based on the information provided in the soil characterization report, DERM will issue a soil determination and provide potential reuse options in accordance with the guidelines set forth below.

A. Clean Soil:

Soil is classified as clean soil if:

i. The concentration distribution of the characterization data is consistent with Miami-Dade County's naturally occurring background concentration distribution (Appendix 1)* supported by appropriate statistical techniques (distribution comparisons, central tendency hypothesis testing, etc.); or,

ii. The concentrations of the COCs are less than the practical quantitation limits (PQLs) in the case of COCs which are not reasonably expected to occur naturally in soils (e.g., organic chemicals) or for which a naturally occurring background concentration has not been established pursuant to item A.i above; or,

iii. The concentrations of the COCs are less than or equal to DERM-approved, site-specific natural background concentrations established using the Natural Background Guidance (Risk Based Corrective Action (RBCA) Guidance No. 7C) https://www.miamidade.gov/environment/library/instructions/risk-based-corrective-action.pdf .

NOTE

*The chemicals listed in Appendix 1 shall not be construed as representing a list of required COCs. These represent COCs for which DERM has established naturally occurring background concentrations. The applicable and appropriate COCs for the purpose of characterization shall be determined as indicated in Comment No.3.iii above.

Clean Soil may be reused, without restrictions, anywhere within Miami-Dade County. However, for all material for which a clean fill determination has been issued, to ensure tracking and verification the entity requesting the soil reuse classification is required to notify DERM of the recipient location and volume transported to each recipient location. Additionally, all applicable local, state, and or federal permits and approvals (e.g., DERM permit, Planning and Zoning approval, Municipal zoning, etc.) must be obtained prior to any filling operations in wetlands (e.g., dredge and fill permit) and surface waters (e.g., lakefill permit).

NOTE: Recovered Screen Material (RSM) or Screened Solid Waste (SSW) is solid waste and therefore notwithstanding any characterization cannot be classified as clean soil.

B. Residential Soil:

Soil is classified as residential soil if the concentrations of the COCs are less than or equal to the lower of:

i. The residential direct exposure soil cleanup target levels (CTLs), or

ii. The groundwater leachability-based soil CTLs, or

iii. The fresh surface water leachability-based soil CTLs (as applicable), or the marine surface water leachability-based soil CTLs (as applicable), specified in Table 2, Section 24-44(2)(f) of the Miami-Dade County Code (the Code).

The following RBCA options are available to further assist in evaluating soils:

- For soil with contaminant concentrations exceeding the groundwater, fresh surface water, or marine surface water leachability-based soil CTL, direct leachate testing may be performed using USEPA Method 1312, Synthetic Precipitation Leaching Procedure (SPLP). If the results of the leaching test are less than or equal to the groundwater, fresh surface water and/or marine surface water (as applicable) CTLs specified in the Code, then the leaching test results shall be utilized in lieu of the leachability-based soil CTLs.

  For COCs without a default leachability-based soil CTL, a leaching test is required for any sample with a total concentration which is inconsistent with the naturally occurring background concentrations and concentration distribution provided in the DERM memo 'Natural Background Concentrations in Miami-Dade County Soils" dated February 8, 2002 (provided for ease of reference in Appendix 1 Tables 1 and 2). Be advised, however, that the leachate test results do not supersede the residential direct exposure soil CTLs.

- Alternate soil CTLs for Total Recoverable Petroleum Hydrocarbons (TRPH) may be derived based upon the site-specific composition of TRPH (see Section 24-44(2)(f)(iii)4 of the Code, Appendix C of the Technical Report - Development of Cleanup Target Levels for Chapter 24, Miami-Dade County Code-, and RBCA Guidance No. 7D). https://www.miamidade.gov/environment/library/instructions/risk-based-corrective-action.pdf

The reuse of residential soil is subject to the following conditions:

a. 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.

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

c. A buffer of at least 25 feet shall be maintained between any residential soil reuse location and an adjacent surface water body or ecologically sensitive areas (e.g., wetlands, etc.).

C. Verification Sampling

For soil determined to be residential soils or clean fill, and not subject to a DERM approved Soil Management Plan, DERM reserves the right to perform inspections at the generating and receiving facility to ensure compliance with the above. DERM shall be notified at least 24 hours prior to the start of transport of material to the approved recipient facility. DERM requires verification sampling (to be split with DERM staff) at the recipient location/receiving facility of any soil approved for reuse, including soils classified as clean fill. To facilitate verification sampling at the recipient facility, the locations where the reused soils are placed or stockpiled shall be included on a scaled site figure(s), including GPS coordinates, and shall be submitted to DERM along with a verification sampling plan within thirty (30) days the soils being transported to the facility. The verification sampling plan shall provide for an adequate number of samples to confirm that the quality of the material is consistent with the characterization data which was the basis for DERM's soil classification determination.

D. Contaminated Soils

Soils with contaminant concentrations that exceed the residential direct exposure soil cleanup target levels (CTLs), the groundwater leachability-based soil CTLs, the fresh surface water leachability-based soil CTLs (as applicable), or the marine surface water leachability-based soil CTLs (as applicable) are classified as contaminated and are subject to the following:

i. On a case-by-case basis, as a part of site rehabilitation activities, contaminated soil may qualify for onsite reuse at the site at which it is generated under a department approved Contaminated Soil Management Plan. Specifically, contaminated soils may be blended with less contaminated soils (generated onsite) or with imported clean fill, to achieve the applicable SCTL(s) for onsite reuse, or contaminated soil may be reused onsite under the provisions of a conditional closure in accordance with Section 24-44(2) of the Code or Chapter 62-780, FAC.

ii. Contaminated soil that is not reused at the site at which it was generated in accordance with C.i. above shall be disposed of at a permitted Class I landfill. The landfill operator should be contacted for information regarding requirements for disposal of contaminated soils. Copies of disposal receipts or manifests identifying the transporter, the disposal location, the truck number, and volume of material disposed as well as legible copies of disposal manifest or tipping receipts (dated, on company letterhead and indicating the volume of material received) from the landfill facility shall be submitted to DERM within thirty (30) days of disposal.

iii. Offsite reuse or inappropriate disposal of contaminated soil will result in DERM enforcement action including but not limited to orders for the removal and disposal of said soils. Offsite reuse of contaminated soil shall be construed as ground pollution as defined in Section 24-5 of the Code. Contaminated soil may not be stored onsite for greater than ninety (90) days unless authorized by DERM. Contaminated soil shall be stored over an impervious surface to prevent leachate infiltration and secured in a manner that prevents

human exposure to contaminated soil or sediment and prevent soil or sediment exposure to precipitation that may cause surface runoff.

iv. The onsite treatment or processing (except blending) of contaminated soil may constitute soil treatment and may be subject to the provisions of Chapter 62-713, FAC.

NOTE:
Notwithstanding any of the above, DERM may consider approval and reuse, on a case-by-case basis, of material such as muck and marls with concentrations above the soil CTLs, provided DERM has determined that the material represents virgin material devoid of anthropogenic influences and these concentrations represent naturally occurring background concentration and that the use of the material will not create pollution, or will not materially increase the level of pollution on the recipient property and will not result in an unacceptable exposure risk.

General Comments

1. It is the responsibility of the generator to advise the receiver of any conditions associated with the reuse of soils and the receiver is responsible to reuse the soil in accordance with the conditions set forth in this guidance, and in any soil classification letter issued by DERM and in accordance with all applicable federal, state, and local regulations.

2. The consultant collecting the samples shall perform field sampling work in accordance with Chapter 62-160, FAC., Standard Operating Procedures (DEP-SOP-001/01) as may be amended from time to time. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements.

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

4. 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 in Rule 62-780.210, FAC., and the source removal provisions set forth in Section 24-44(2)(j) of the Code or Rule 62-780.525, FAC.

5. Soil that is classified as a RCRA hazardous waste is not suitable for reuse, blending, or for disposal at any landfills or disposal facilities in Miami-Dade County. RCRA hazardous waste characterization by USEPA Test Method 1311, TCLP analyses, shall be performed when soil concentrations of the COCs exceed the Total Soil Criteria listed in Appendix 2. The TCLP results shall be compared to the TCLP Criteria provided in Appendix 2. Any soil that exceeds the TCLP Criteria or is otherwise classified as a RCRA hazardous waste (e.g., listed waste, etc.) shall be disposed of at a permitted hazardous waste treatment, storage, disposal facility in accordance with all applicable regulations.

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

7. All notifications pursuant to this guidance shall be provided via email to DERMPCD@miamidade.gov.

APPENDIX 1

Summary Statistics – Naturally Occurring Concentration of Inorganics in Soils in Miami-Dade County.

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

https://www.miamidade.gov/environment/library/memos/soil-study.pdf

*All concentrations below the method detection limit

Dataset – Naturally Occurring Concentrations of Inorganics in Soils in Maimi-Dade County

Table 2: Naturally Occurring Concentration of Twelve Inorganics in Miami-Dade County Soils (mg/kg)												
Unsaturated Soils (<=25% Moisture)												
Parameter	As	Ba	Cd	Cr	Cu	Fe	Pb	Hg	Ni	Zn	Al	Mn
Viscaya	0.60	4.96	0.13	5.51	5.50	1302	33.15	0.16	1.77	12.67	2034	49.42
Viscaya 2	0.71	6.71	0.15	6.15	5.00	2168	268.50	0.24	2.33	20.14	3549	97.66
Virginia3	3.89	8.06	0.37	6.20	6.20	1675	11.66	0.11	2.16	27.91	600	17.06
Matheson	0.50	4.67	0.05	3.70	6.90	948	0.20	0.05	0.95	8.66	908	6.65
Cutler Natural	0.89	5.25	0.07	5.13	2.13	1104	17.16	0.05	1.64	7.12	2047	27.18
Oleta1	0.51	6.30	0.16	1.92	4.62	725	0.26	0.22	6.85	12.33	341	17.81
Oleta3	1.86	4.67	0.09	1.97	1.57	700	41.92	0.03	1.79	6.19	223	10.80
Oleta4	1.29	4.22	0.06	2.51	1.64	802	35.24	0.03	1.16	12.14	381	7.55
Greynold1	0.59	7.57	0.13	3.43	7.60	1702	12.55	0.23	1.10	19.97	1489	54.84
Greynold2	0.34	6.63	0.07	1.89	3.13	1084	36.59	0.12	1.38	12.56	646	15.09
Greynold3	2.58	7.56	0.37	10.64	6.40	801	37.67	0.20	1.64	29.89	675	24.95
Greynold4	0.10	6.09	0.14	2.10	2.69	899	16.92	0.15	1.30	15.84	946	31.34
Countyli1	0.10	2.50	0.03	1.62	0.76	274	5.71	0.01	0.58	4.80	467	2.58
Countyli2	0.10	2.60	0.07	2.39	1.51	118	11.94	0.01	0.48	7.17	151	14.38
Dolphin C	0.10	1.48	0.02	0.60	0.35	99	5.05	0.01	0.30	2.79	91	1.31
Madden1	0.32	5.64	0.07	1.43	5.10	740	7.35	0.02	0.74	11.84	420	14.29
Madden2	0.10	6.05	0.07	2.17	6.10	675	5.13	0.02	0.88	11.25	758	16.30
Madden3	0.91	8.93	0.09	2.26	12.60	1405	22.59	0.02	0.93	10.82	693	24.31
Madden4	1.06	16.80	0.25	3.47	8.70	1447	40.73	0.02	1.17	30.02	745	40.59
Madden5	1.96	6.74	0.07	3.32	2.65	1891	10.03	0.01	1.24	7.73	1019	14.16
Madden6	2.60	10.50	0.07	2.94	3.23	1582	23.25	0.02	1.81	3.89	715	19.59
Madden7	1.62	7.27	0.07	2.49	2.57	1061	5.96	0.01	1.48	5.77	677	20.15
Madden8	1.92	7.69	0.06	2.05	2.67	1778	12.46	0.01	0.92	4.00	752	11.28
Tamiami Complex No 5	0.96	3.81	0.02	3.30	1.71	2102	17.16	0.01	0.96	4.19	1660	17.86
Larry and Penny Thompson Park	2.09	4.86	0.04	18.82	3.95	4915	23.78	0.03	3.17	5.49	7965	107.56
Boystown	0.62	4.50	0.01	6.89	1.52	2755	11.66	0.03	1.84	2.15	2826	12.45
ME Thompson Campground	0.10	3.63	0.08	6.52	0.57	548	0.20	0.00	1.63	0.72	613	20.67
ME Thompson Campground	0.66	2.52	0.04	4.86	0.51	526	0.26	0.00	1.01	0.52	574	12.50
Deering Estate Addition	0.37	13.81	0.09	3.88	6.07	2492	94.38	0.06	3.10	12.09	3379	276.53
Deering Estate B	0.57	4.22	0.03	11.72	1.37	2978	11.72	0.06	1.94	4.86	4788	44.10
Deering Estate A	0.66	4.84	0.02	8.26	1.46	2243	6.41	0.06	1.90	7.08	3827	36.48
Snapper Creek Park B	1.08	8.11	0.02	13.09	1.32	2752	6.57	0.05	2.87	6.30	5344	33.42
East Greynolds Park	0.82	9.43	0.09	5.67	4.22	2307	49.06	0.14	1.26	19.18	2364	77.77
Snapper Creek Park A	0.18	14.87	0.34	5.95	5.58	2274	7.87	0.16	1.77	95.01	3477	49.38
Matheson Hammock	0.36	11.04	0.06	9.09	2.82	2084	9.35	0.11	2.27	6.23	4045	215.64
Larry and Penny Thompson Park	1.67	6.95	0.02	23.62	2.82	8064	29.18	0.02	4.45	4.17	9689	257.37
Owaissa Bauer Park	1.45	9.85	0.08	23.22	7.20	4279	20.40	0.08	5.48	5.28	9355	156.46
Castellow Hammock Park	2.93	12.92	0.03	58.47	5.90	17280	33.99	0.06	14.14	8.16	23836	220.48

APPENDIX 2

Total Soil and TCLP Criteria for Toxicity Characterization

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

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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