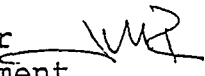


Memorandum

Florida Department of Environmental Protection

TO: District Directors
Waste Program Administrators

FROM: John M. Ruddell, Director 
Division of Waste Management

DATE: January 19, 1996

SUBJECT: Applicability of Soil Cleanup Goals for Florida

Background:

At the beginning of 1995 the Bureau of Waste Cleanup distributed to you and your staff a list of soil cleanup goals to be used when making cleanup decisions. These cleanup goals were derived following, in general, EPA's methodology since that agency was developing their own generic Site Screening Levels (SSLs) at the same time. Subsequently, EPA's approach underwent widespread review both within and outside the agency. As a result, Florida's goals were redefined throughout 1995 to parallel EPA's SSLs.

My September 29, 1995 memorandum listed the Florida Soil Cleanup Goals developed by Dr. Stephen M. Roberts (UF toxicologist under contract to FDEP). These goals are not identical to the EPA's SSLs. Inasmuch as one can "fine tune" generic goals, ours are tailored to Florida's typical soil characteristics, hydrogeology, meteorological data, average source size and state groundwater standards. The Florida Soil Cleanup Goals were also modified from EPA's SSLs to include toxicity considerations that were not available in IRIS, the Federal toxicity database.

Purpose:

The first several pages of the September 29, 1995 document explain the appropriate and intended use of the document. However, there have been some questions about it; therefore, I would like to elaborate on the applicability of these goals:

The Soil Cleanup Goals are intended to be used only as "goals" for cleanup decisions in corrective actions and should not be used by the agency as rule, standards or to deny or approve permits. The FDEP has found that most business/site owners do not normally have the money or the expertise to establish Site-specific Rehabilitation Levels (SRLs) as allowed by our cleanup Consent Order conditions. The soil cleanup goals are intended to be used for site screening purposes, for source

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removal evaluations, and as guidance during evaluation of remediation alternatives and design considerations for development of the Remedial Action Plan (RAP) for a site. The soil cleanup goals can and should be used for cleanup decisions if the default assumptions fit the site-specific situation. For your information, although the default parameters used to derive these goals are conservative, they are not necessarily representative of the worst case scenario. In addition, ecological receptors were not taken into consideration when these cleanup goals were developed. A site-specific evaluation should be conducted during the Contamination Assessment phase to determine if protection of ecological receptors is needed at a particular site and, if that is the case, whether the soil goals based on human health are also protective of those ecological receptors.

Please note that the risk assessment phase occurs after the Contamination Assessment Report has been approved. The responsible party can develop site-specific soil cleanup goals utilizing site-specific parameters such as total organic carbon, soil porosity, soil moisture content and dry bulk density in combination with exposure assumptions acceptable to the Department.

The evaluation process should take into consideration the following criteria:

- 1) the site-specific background levels,
- 2) the Method Detection Limits (MDLs),
- 3) the soil cleanup goals, and
- 4) the site contaminant levels.

The site contaminant levels (criterion 4) for each Chemical of Concern (COC) should be compared to the highest value of the first three criteria. If the site contaminant levels are below the highest value, then no remediation is required for that contaminant. If the site contaminant levels are higher than the highest value, then remediation alternatives should be evaluated taking into consideration the specific nature of the site and the responsible party's ability to effectively manage the risk of a particular site contaminant level. FDEP may consider site-specific risk management alternatives that may further modify the guidance levels for the contaminant. These health-based soil goals are evaluated based on the nature and intended use of the site (e.g., residential or industrial) and usually only apply to the upper two feet of soil. If the contaminated soil can be permanently covered with more than two feet of clean soil or

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otherwise have the exposure pathways restricted, the site may not need further remediation if the contaminated soil is not a source of groundwater contamination.

The second use of the soil cleanup goals is to provide a guidance level for the potential leachability of various soil contaminants. The leachability level (last column on the right) is intended to give you, site owners and consultants an indication of the soil contaminant levels that may cause groundwater contamination in excess of Florida's water quality standards and minimum criteria. The goals are applicable if a recent discharge has occurred (within the last year) or if indeed there are monitoring data showing violation of groundwater standards and minimum criteria. The leachability levels apply throughout the soil profile, when applicable.

The soil values may be used for other purposes (other media) if indeed the particular application fits the situation (e.g., sediments that upon dredging will be used as soil). Again, an analysis of the specific situation must be performed (i.e., ascertain land use, exposure duration, leachability concerns, background considerations, etc.).

From time to time, we will update the soil cleanup goals; as of today, the following changes have occurred:

Arsenic;

	Residential	Industrial	Leachability *
Old:	0.7 mg/Kg	3.1 mg/Kg	pass TCLP (mg/L)
New:	0.8 mg/Kg	3.7 mg/Kg	same as before

* In certain cases, soil may pass TCLP but still leach to groundwater and cause groundwater violations. In these cases, further evaluation will be needed to determine appropriate leachability-based goals.

Please contact Ligia Mora-Applegate at Suncom 278-3935 if further assistance is needed.

cc: Doug Jones
Bill Hinkley
Jim Crane
Satish Kastury