

**Contaminated Media Forum
Tallahassee, Florida July 12, 2016**

1. The purpose of this meeting was to review proposed revisions to Chapter 62-777, F.A.C. Proposed revisions include updates to acute toxicity cleanup target levels (CTLs) in soil as well as updates to exposure factors, toxicity values, physical/chemical parameters, inclusion of inhalation and dermal routes to groundwater cleanup target level (GCTL) equations, and the use of age dependent adjustment factors (ADAFs) in CTL equations. Additionally, revisions to Chapter 62-780, F.A.C. including updates regarding the use of non-recorded controls and inclusion of solid waste cleanup provisions were discussed.
2. The proposed updates regarding the use of non-recorded controls in Chapter 62-780, F.A.C. were briefly discussed where the Florida Department of Environmental Protection (FDEP) stated that ordinance reviews would be implemented to expedite the process of getting institutional controls approved by the Department. A request was made that the department provide a list summarizing common scenarios in which institutional controls would be approved or rejected.
3. The Florida Brownfields Association (FBA) proposed adding language to Chapter 62-780, F.A.C. to address cleanup of solid waste under specific circumstances, which was followed by a brief discussion by the CMF participants. Further review of the proposed language will take place by FDEP.
4. Updates to the criteria for deriving acute toxicity-based cleanup target levels in soil (SCTLs) were proposed at the July 22, 2015, November 3, 2015 and January 20, 2016 Contaminated Media Forum (CMFs). Hazardous Substance and Waste Management Research, Inc. (HSWMR) provided a presentation given previously at the January 20, 2016 CMF where an update to the pica soil ingestion rate was proposed as recommended by the 2011 United States Environmental Protection Agency's (USEPA's) Exposure Factors Handbook (EFH). The recommended ingestion rate in the EFH at the time Chapter 62-777, F.A.C. was adopted was 10 g/day. The University of Florida presented provisional acute SCTLs that were calculated based on a soil ingestion rate of 1 g/day. Updated toxicity values based on a review of current literature regarding acute poisoning doses reported in humans were incorporated into the development of the provisional acute SCTLs.
 - a. From the literature, the lowest observed adverse effect level (LOAEL) or the no observed adverse effect level (NOAEL) reported was chosen and an uncertainty factor (UF) was applied to derive an acute reference dose (RfD_{acute}) for systemic toxicity endpoints. If the adverse effect endpoint was transient gastrointestinal illness, the LOAEL was chosen and no UF was applied. This RfD_{acute} was then compared to the chronic RfD and the higher of the two values was used to calculate an acute SCTL using the equation specified in the Chapter 62-777, F.A.C. Technical Report. Use of a higher chronic RfD to protect against acute toxicity is based on the rationale that if this dose is acceptable for everyday exposure, it should also be safe for a one time acute exposure.

- b. The acute SCTLs were then compared to updated chronic SCTLs where the lower of the two numbers represents a safe residential SCTL protective of both acute and chronic exposures. According to the analysis presented by University of Florida, barium, copper, and fluoride have residential SCTLs that remain driven by acute toxicity scenarios. The residential SCTLs for cadmium, cyanide, nickel, phenol, and vanadium are no longer driven by acute toxicity, but by a chronic exposure scenario.
 - c. The updated chronic SCTLs used in this analysis were calculated using updated toxicity values and physical/chemical parameters based on the USEPA's RSL tables. Updates were not yet made to the exposure assumptions, as these changes have not yet been decided upon by FDEP. Consequently, these numbers may change if updates to the assumptions are made. If changed, the comparison to acute SCTLs will need to be re-evaluated to ensure the lower of the two values is chosen as the most protective residential SCTL.
 - d. FDEP supports the pica soil ingestion rate recommended in the EFH. There was a request made to add language to the rule specifying that solubility testing at acute toxicity sites could be used to determine whether or not the chemical was in a bioavailable form. FDEP stated that they would look into this request.
5. Updates to input parameters for calculating CTLs were proposed at the July 22, 2015 and November 3, 2015 CMFs including updates to exposure factors, toxicity values, physical/chemical parameters, inclusion of dermal and ingestion routes in the GCTL equation, and the use of ADAF in CTL equations.
- a. For body weight (BW) estimates, the USEPA's EFH lists an average body weight for several age ranges, while the FDEP uses age-specific body weights. Therefore, the adoption of the EFH body weight recommendations may not be appropriate for use by the Department and needs to be further analyzed. University of Florida will compare the most recent NHANES body weight data in the age groups listed in the EFH to body weight data used for Chapter 62-777, F.A.C. to assess whether any significant change in BW trends may be present.
 - b. For surface area (SA), there was a request to investigate whether there have been any recent updates to the published algorithms for scaling SA from BW. Geosyntec will look for any updates if available.
 - c. For exposure frequency (EF) and exposure duration (ED) the USEPA defaults appear appropriate. For the remaining exposure factors, UF will prepare a table of the proposed exposure factors for Chapter 62-777, F.A.C. including the source of the proposed values for future discussions.
 - d. A concern was raised that referencing a specific version of the EFH in Chapter 62-780, F.A.C. may limit the use of information from any future versions or USEPA default exposure recommendations. However, per the Joint Administrative Procedures Commission (JAPC), specification of

a particular version is required for inclusion in the Florida Administrative Code. FDEP restated that the use of the 2011 EFH is a department preference and when updated versions of the EFH or USEPA defaults become available they may be brought to the department for approval to use in risk assessments.

6. FDEP stated that a revision to the toxicity source hierarchy in Chapter 62-780, F.A.C. is currently proposed where the recommended sources are: 1) IRIS, 2) PPRTV, 3) and other appropriate sources. Additionally, the USEPA routinely publishes regional screening level (RSL) tables with recommended toxicity information. The RSL table was suggested as source for obtaining a consensus toxicity value from the other appropriate sources. Therefore, the RSL table would be used after IRIS and the PPRTV. This methodology would help maintain consistency with the USEPA. University of Florida will prepare a table comparing the toxicity values listed in Chapter 62-777, F.A.C. to the current toxicity values on the May 2016 RSL tables so that participants of the CMF may see the instances where changes to toxicity values are being proposed.
7. Updates to physical/chemical parameters are proposed to reflect USEPA's May 2016 RSL tables and follow the USEPA's hierarchy of sources when data are not available from the RSL tables. As the RSL tables are updated several times a year, when new updated become available for physical/chemical parameters, alternative soil cleanup target levels (ASCTLs) may be suggested based on these updates. University of Florida will update the CTL database using the May 2016 RSL suggested physical/chemical parameters.
8. Updates proposed for the GCTL equations include the addition of the dermal and inhalation routes for all chemicals and the removal of relative source contribution (RSC) from the non-carcinogenic equation. An update to the water ingestion rate of 2.5 L/day is proposed per USEPA recommendation. The proposed changes would produce GCTLs inconsistent with Chapter 62-550, F.A.C. Additional considerations for interdepartmental consistency include ingestion rate, BW, ED, and age ranges for receptors. FDEP stated that the goal for GCTL equation updates is to model the USEPA tap water equation as closely as possible.
 - a. There was concern with the way USEPA identifies chemicals as volatiles. Interest in exploring alternate methodologies was expressed.
 - b. FDEP stated that they would verify internally that removal of the RSC component and updates to the exposure assumptions will not conflict with other water management departments.
9. Lastly, the use of an age-dependent adjustment factor (ADAF) was discussed for addition to the CTL equations. The USEPA recommends the use of an ADAF when considering safe levels of exposure to mutagenic carcinogens due to the fact that children may be more susceptible to adverse effects. A majority of states (76% of those polled) use an ADAF to calculate safe levels of exposure to mutagens. ADAFs would not have an affect on chemicals with standards.

- a. There was a concern that because the ADAF is an average number based on a range of sensitivities, the ADAF may overestimate or underestimate the actual potency a mutagen has on a child.
 - b. FDEP will further discuss the addition of an ADAF to the CTL equations internally.
10. The next CMF is proposed to take place in three months time. FDEP stated that by the time Chapter 62-777, F.A.C. is adopted, an update to the Technical Report would be necessary.