

**BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In re:

Petition for Rulemaking of
Associated Industries of Florida to Insure
Consistency of Rule Chapters 62-777 and 62-780, F.A.C.,
With the Requirements of Section 376.30701,
Florida Statutes



Petition to Initiate Rulemaking

Petitioner, Associated Industries of Florida, on behalf of itself and its member companies, submits this Petition pursuant to Section 120.54(7), Florida Statutes, seeking to revise the language of Chapters 62-777 and 62-780, F.A.C., on the following grounds:

I. **Petitioner's Interest in the Proposed Action**

1. Petitioner, Associated Industries of Florida ("AIF"), is a voluntary association of diversified businesses in Florida. AIF's address is 516 N. Adams Street, Tallahassee, Florida 32301. AIF's telephone number is 850/224-7173. AIF was created to foster an economic climate in Florida conducive to the growth, development, and welfare of industry and business and the people of the state.¹ Among other activities, AIF advocates for fair and equitable legislation affecting the welfare of its members or of business and industrial activities of the State as a whole.²

2. AIF's member companies are subject to Chapter 376.30701, Florida Statutes, commonly referred to as the "Global RBCA" statute (short for "Risk Based Corrective Action"). The Global RBCA statute ("RBCA") governs the cleanup of contaminated sites in the State of Florida. The Florida Department of Environmental

¹ See http://aif.com/about_us.shtm .

² See http://aif.com/about_us_mission.shtm .

Protection (“Department”) has promulgated regulations that implement RBCA, including Chapters 62-780 and 62-777, F.A.C. AIF’s member companies and others are subject to these regulations. The Department has also published a RBCA-related guidance document: *Technical Report: Development of Cleanup Target Levels (CTLs) For Chapter 62-777, F.A.C. (February 2005)* (“Technical Report”).

3. AIF’s member companies strongly support the use of risk-based corrective action for making cleanup decisions. Returning contaminated properties to productive uses which protect human health and the environment is a goal of AIF members. AIF members share the Department’s and the public’s interest in cleaning up contamination to levels which protect human health and the environment. The members support the spirit and legislative intent behind RBCA. However, as set forth below, the Department’s implementing regulations are having the unwarranted consequence of delaying cleanups of contaminated sites in Florida because responsible parties are being required to achieve unnecessarily conservative default cleanup levels, rather than being permitted to develop and use alternative risk-based levels as provided by RBCA.

4. This Petition specifically focuses on the inflexibility inappropriately imposed by the RBCA regulations upon RBCA’s broad mandates that alternative cleanup target levels for soils may be developed using “site-specific data, modeling results, risk assessment studies, risk reduction techniques or a combination thereof,” and which, if developed in that manner, shall be approved by the Department.

II. Description of Proposed Action

1. The Florida Legislature enacted the RBCA statute in 2003. The statute sets out an iterative, risk-based process for, *inter alia*, establishing Cleanup Target Levels (“CTLs”) to be used at contaminated sites in order to protect human health and the environment “under actual circumstances of exposure” in Florida.

2. RBCA required the Department to develop implementing regulations consistent with the statute and to establish “criteria by rule for the purpose of determining, on a site-specific basis, the rehabilitation program tasks that comprise a site rehabilitation program...” Regulations were promulgated in 2005, and are set out in Chapter 62-780, F.A.C., which cross references the provisions of Chapter 62-777, F.A.C. Chapter 62-777, F.A.C., was initially adopted by the Department in 1999 and, prior to 2005, applied in conjunction with specific risk-based corrective action programs. The 2003 passage of RBCA and the 2005 promulgation of Chapter 62-780, F.A.C., resulted in Chapter 62-777 being applicable statewide to non-program contaminated sites. However, the regulations are not consistent with RBCA.

3. RBCA explicitly required the Department as part of its rulemaking to establish default CTLs for soils (“SCTLs”), with the caveat that the default SCTLs are not to be used as mandatory cleanup standards, but rather as conservative default values. The numeric SCTLs are provided in Table II of Chapter 62-777, F.A.C., and are incorporated by reference into Chapter 62-780, F.A.C.

4. The Department’s “Technical Report” sets out, among other things, a methodology for developing alternative cleanup target levels (ACTLs). This guidance document is explicitly referenced in both Chapters 62-777 and 62-780, F.A.C.

5. As explained in greater detail below and in the attached documents, the formula used by the Department to promulgate the default SCTLs incorporates a series of very conservative assumptions that collectively result in cleanup target levels that are so low that they completely fail to reflect protection under “actual circumstance of exposure” in Florida. In addition, although RBCA and its implementing regulations specifically allow for the establishment of ACTLs for soils, the Department’s prescribed procedure for establishing ACTLs, as set forth in the non-regulatory “Technical Report”

guidance memorandum, is so inflexible as to permit no meaningful changes to the default SCTLs.³

6. Accordingly, AIF proposes that Department amend its rules as follows:⁴

*A. Petitioner seeks to revise the language of Chapter 62-777.100, .150 and .170:*⁵

(1) To more clearly establish that the Department’s referenced guidance documents, none of which have gone through rule-making, including the CTL-related “Technical Report” listed at 62.777.100(2), are not rules and that the Department cannot require use of any guidance or the contents thereof:

62.777.100 Referenced Guidelines.

Specific references to the guidelines listed below are made within this chapter. These guidelines are not standards as defined in Section 403.803, F.S. Use of the guidelines by the Department or any other person is not mandatory; the guidelines are included for informational purposes only, and no other language in this Chapter 62-777, F.A.C. nor any other Chapter shall be construed as requiring the use of the guidelines or any of the information, data, assumptions, values, methodologies, or procedures set forth therein.

(2) To reflect the RBCA statute’s mandate that the Department “shall approve” ACTLs as required by RBCA:

62-777.150 Applicability.

* * *

(7) As further provided in Section 376.30701, Florida Statutes, and in the substantive provisions of the above-referenced rule chapters, contaminant cleanup target levels (CTLs) are default cleanup criteria and do not establish standards

³ This petition does not seek to invalidate any of the Department-approved methods for establishing ACTLs. Rather, this Petition seeks only to add to and clarify the existing regulatory language to explicitly provide for the Department’s statutory obligation to approve ACTLs developed using any one or more of the risk evaluation and management parameters identified in RBCA.

⁴ In this section, Petitioner provides excerpts containing its proposed revisions to the referenced regulations. New language proposed to be added to the regulations is underlined; language proposed to be deleted is struck through. A short explanation for each proposed change precedes each revised provision.

⁵ These proposed changes to 62-777 are proposed to eliminate any real or perceived conflict between Chapters 62.777 and 62.780 in the event that the Petitioner’s proposed changes to 62-780 are adopted.

pursuant to Chapters 62-302, 62-520, or 62-550, F.A.C. Deviations from the default cleanup criteria (alternative cleanup target levels) are allowed ~~if and shall be~~ approved by the Department pursuant to applicable provisions of Chapters 62-713, 62-730, 62-770, 62-780, 62-782, and 62-785, F.A.C. Nothing herein is intended to limit the use of risk assessments ~~and~~ or site-specific considerations to establish site-specific CTLs.

(3) To more clearly describe the derivation of ACTLs:

62-777.170(2) Derivation of Cleanup Target Levels.

* * *

(b) Table III provides soil properties, and test methods that may be used for determining soil properties, if soil properties are considered for the derivation of alternative ACTLs. ~~based on site-specific soil characteristics [refer to the~~ The methodology set out in the technical report referenced in subsection 67-777.100(2), F.A.C., may be used by a person seeking to establish an ACTL, but that methodology is not required to be used for guidance ~~on the derivation of alternative ACTLs.~~

(c) Table VI in Figures 4, 5, and 7 provides default parameters that may be used, but are not required to be used in Figures 4, 5, and 7.

B. Petitioner seeks to revise the language of Chapter 62-780.100, .600, .650 and .680 as follows:

(1) To more clearly establish that the Department's referenced guidance documents, none of which have gone through rule-making, including the CTL-related "Technical Report" listed at 62.780.100(2), are not rules and the Department cannot require use of any guidance or the contents thereof:

62-780.100 Referenced Guidelines.

Specific references to the guidelines listed below are made within this chapter. The guidelines are not standards as defined in Section 403.803, F.S. Use of these guidelines by the Department or any other person is not mandatory; the guidelines are included for informational purposes only, and no other language in this Chapter, 62-780, F.A.C. nor any other Chapter shall be construed as requiring the use of the guidelines or any of the information, data, assumptions, values, methodologies, or procedures set forth therein.

(2) To establish that ACTLs may be based on information other than “site-specific soil properties”, that information on soil properties, if used, need not be obtained only through analyses of site soil, and that ACTLs are statutorily required to meet the risk limits set out in RBCA, rather than the purposefully over-conservative default CTLs:⁶

62-780.600 Site Assessment.

* * *

(5) The site assessment shall include tasks that are necessary to achieve objectives described in subsection 62-780.600(3), F.A.C., and include the following, as applicable:

* * *

(c) Sampling of soil from the unsaturated zone for the following criteria, as applicable:

* * *

2. Measurement of appropriate soil properties such as texture, pH, moisture content, dry bulk density, organic carbon content, and infiltration rate using the test methods specified in Chapter 62-777, F.A.C., Table III, if such soil properties are chosen for the development of alternative soil CTLs in accordance with the technical report referenced in subsection 62-780.100(2), F.A.C. If soil properties are chosen to be used, the first preference is to make Mmeasurements shall be made on soil from within the contaminated area when feasible. Otherwise, measurements may be made on soil from an alternative location that has equivalent soil properties, and/or other generally applicable and relevant data on soil properties may be used;

* * *

3. A recommendation to prepare a risk assessment or a Risk Assessment work plan shall be included if the PRSR chooses to justify alternative CTLs using risk assessment studies demonstrating that human health, public safety, and the environment are protected to at least the same degree provided by Section 376.30701, Florida Statutes ~~the CTLs referenced in this chapter~~. The work plan shall include a schedule for completion of a risk assessment and documentation adequate to support the request to do one or more of the task elements of subsection 62-780.650(1), F.A.C., and shall specify the parameters or exposure assumptions that will be used to develop the alternative CTLs pursuant to Rule 62-780.650, F.A.C.; or

⁶ See Attachment 3 for an explanation of the compounding effect of the multiple conservative assumptions used by the Department in deriving the default CTLs.

(3) To clarify that appropriate exposure assumptions widely applicable to individuals in Florida are acceptable, that “site-specific soil properties” are not required to be used in deriving ACTLs, and that the full range of risk evaluation and management parameters provided by RBCA may be used to derive ACTLs:

62-780.650 Risk Assessment.

(1) During the risk assessment process, the PRSR is encouraged to have discussions with the Department at various decision points to establish applicable exposure factors, relevant receptors, and risk management options based on the current and projected land use(s) at the site. If a risk assessment is performed, the following risk assessment task elements shall be performed, as appropriate:

(a) An exposure assessment that identifies pathways and routes by which human and environmental receptors may be exposed to contaminants and determines levels of contaminants to which human and environmental receptors may be exposed. The exposure assessment shall:

* * *

4. Determine exposure factors (exposure duration and frequency) based on site specific characteristics applicable to individuals in Florida, including consideration of current and plausible projected land uses. Institutional and engineering controls may be proposed in order to ensure that exposure factors do not change; and

* * *

(c) A risk characterization that utilizes the results of the exposure assessment, the toxicity assessment, and any other relevant public health and epidemiological assessments, to characterize cumulative risks to the affected population(s) and the environment from contaminants found at the site. Based on the concentrations of contaminants found at the site, the characterization shall include:

1. Risks to human health and safety from exposure to the contamination;
2. Risks from the contamination to non-human species and ecosystems; and
3. Derivation of apportioned alternative CTLs, as applicable. [Refer to Appendix C of the technical report referenced in subsection 62-780.100(2), F.A.C., for guidance on the derivation of alternative CTLs for TRPHs based on a sub-classification methodology; and to Chapter 62-777, F.A.C., Table III for guidance on methods that may be used in determining soil properties for the derivation of alternative CTLs based on site-specific soil characteristics, if soil properties are used to derive alternative CTLs.] In developing alternative CTLs, when scientific data are available the potential for additive, synergistic, or antagonistic interactions among contaminants and the potential for exposure to contaminants via multiple pathways shall be considered based on target organ(s)

affected, mechanism(s) of toxicity, and empirical observations from clinical and laboratory studies. The default assumptions shall be that non-carcinogenic chemicals affecting the same target organ(s)/systems have additive effects and that carcinogenic risk, regardless of target organ, is additive. However, non-default target organ(s)/system(s) or effects may be justified through a detailed toxicological analysis of the contaminants present at a specific site.

(d) A justification for apportioned alternative CTLs, as applicable, for groundwater or soil. The justification for the alternative CTLs shall be based upon specific data, modeling results, risk assessment studies, risk reduction techniques or any combination thereof~~the site-specific characteristics affecting the site~~. In establishing the alternative CTLs for groundwater or soil, the following factors shall be used, as applicable: calculations using a lifetime excess cancer risk level of 1.0E-6 and a hazard index of 1 or less, and (for groundwater only) nuisance, organoleptic, and aesthetic considerations. However, the Department shall not require site rehabilitation to achieve a CTL for an individual contaminant that is more stringent than the site-specific background concentration for that contaminant or the best achievable detection limit for that contaminant. The justification may ~~shall~~ be based on:

1. State-wide or ~~The site-specific characteristics pertinent to which affect the~~ the site, including:

- a. The present and projected uses of the affected aquifer(s) and adjacent surface water, with particular consideration of the probability that the contamination is substantially affecting, or will migrate to and substantially affect, a known public or private source of potable water;
- b. The technical feasibility of achieving the soil or water quality criteria based on a review of available technology; and
- c. Site soil characteristics; and/or

2. The results of the exposure assessment, toxicity assessment, and risk characterization pursuant to paragraphs 62-780.650(1)(a), 62-780.650(1)(b), and 62-780.650(1)(c), F.A.C.

(4) To make explicit that the full range of risk evaluation and management parameters provided by RBCA may be used to derive ACTLs, provided that the SCTL methodology uses sound science and the result meets the statutory risk limits, and also that such ACTLs shall be approved by the Department as required by RBCA.

62-780.680 No Further Action and No Further Action with Controls.

(1) Risk Management Options Level I – A No Further Action without institutional controls or without institutional and engineering controls shall apply if the

following conditions are met:

- (a) Free product is not present and no fire or explosive hazard exists as a result of a release of non-aqueous phase liquids;
- (b) Contaminated soil is not present in the unsaturated zone, as demonstrated by the analyses of soil samples collected from representative sampling locations (unless the Department has concurred that soil sampling is unnecessary based on the site-specific conditions), that show that one or more of the criteria for direct exposure and one or more of the criteria for leachability are met, as applicable:

1. Criteria for direct exposure are as follows:

* * *

b. Soil contaminant concentrations, or average soil contaminant concentrations calculated based on the 95% UCL approach pursuant to sub-subparagraph 62-780.680(1)(b)1.d., F.A.C., do not exceed the alternative residential soil CTLs established using site-specific data, modeling results, risk assessment studies, risk reduction techniques or a combination thereof. The Department shall approve ACTLs derived through methodologies other than Table III specified in Chapter 62-777, F.A.C., provided that the underlying science is current and has been peer reviewed or otherwise determined to be valid and well-founded, and provided the ACTL meets the risk limit contained in Section 376.30701, Florida Statutes. ~~site-specific soil properties pursuant to subparagraph 62-780.600(5)(e)(2), F.A.C., and the equations and default residential exposure assumptions specified in Chapter 62-777, F.A.C., Figures 4, 5, 6, and 7 and Table VI.~~ If the 95% UCL approach is utilized for any contaminant, then the soil concentrations shall not exceed the apportioned soil CTLs calculated pursuant to sub-sub-subparagraph 62-780.680(1)(b)1.d.(V), F.A.C.;

III. Statement of Need and Justification

Florida Statute 376.30701 was designed by the Legislature to provide a risk-based corrective action program to allow parties responsible for cleaning up contaminated sites the flexibility to establish cleanup levels which protect human health and the environment in consideration of actual conditions of exposure in Florida. The Legislature set a conservative threshold objective for cleanup standards: no contaminant can be present which poses a theoretical cancer risk exceeding one excess cancer per million people over a lifetime of exposure (expressed in shorthand as “1 x 10⁻⁶”), or exceeding a non-cancer “hazard quotient” of 1. RBCA directs the Department to approve alternative cleanup target levels (ACTLs) developed through “site-specific data,

modeling results, risk assessment studies, risk reduction techniques or a combination thereof” as long as this statutory risk threshold is met.

The Department developed implementing regulations, and also developed guidance for affected parties to use in determining risk-based cleanup standards for soil and groundwater. At the same time the Department, as required by RBCA, developed default cleanup target levels to be used if a party did not choose to develop alternate, protective standards.

1. AIF members’ experience has been that default soil clean up target levels contained in Chapter 62-777, F.A.C. are applied as “not to exceed” cleanup standards.

Soil Cleanup Target Levels (SCTLs) are intended to protect public health “under actual circumstances of exposure.” Unlike Florida’s water quality standards, RBCA explicitly explains that these default SCTLs are not to be used as mandatory cleanup standards, but as default values intended to meet RBCA’s bright line risk limits. Unfortunately, AIF members’ experience with cleanups in Florida indicates that the SCTLs are being applied by the Department both through Headquarters and the District Offices, in fact, as cleanup standards and not as defaults, causing regulated entities in Florida to achieve unnecessary and extremely expensive cleanup standards as opposed to alternate and appropriate ACTLs that are reasonable and implementable and protective of human health and the environment.

2. The methodology set out in the *Technical Report* is applied as the single standard for calculating alternative CTLs

RBCA explicitly provides that the Department shall approve ACTLs developed through “site-specific data, modeling results, risk assessment studies, risk reduction techniques or a combination thereof.” RBCA does not mandate that the Department prescribe how such ACTLs must be calculated. In practice, AIF members have found that the methodology set out in the Technical Report is applied as the only acceptable formula for determining alternate CTLs. By requiring strict adherence to the methodology prescribed in the Technical Report, including the underlying factors and assumptions, the

Department has created a procedure that ignores or severely limits the use of most of the risk evaluation and management parameters specifically allowed in the RBCA statute.

In addition, the Department has, in practice, refused to accept ACTLs derived from risk assessment studies that employ probabilistic techniques utilizing scientifically-valid ranges of exposure, toxicity and other appropriate factors that collectively encompass representative and more realistic estimates of actual circumstances of exposure.

3. There is undue restriction in 62-780 introduced by restricting risk considerations to “site-specific” information and by ignoring risk factors which are generally applicable to people in Florida.

The Technical Report was prepared for the Department by an outside contractor, the Center for Environmental & Human Toxicology, at the University of Florida, Gainesville. The Technical Report sets out the Department’s prescribed methodology for calculating ACTLs at Section V.B. Section V.B of the Technical Report is titled “Development of Site-Specific SCTLs”. RBCA does not limit the applicability of ACTLs to only “site-specific” criteria. Rather, RBCA provides a menu of risk evaluation and management parameters which may be used to derive ACTLs, with “site-specific data” being just one of those parameters. In practice, the Department has interpreted and applied RBCA, contrary to the statutory language, as requiring that site-specific data, and *only* site-specific data, be used in lieu of other appropriate information, including the best available science. See examples of communications received from the Department that state that the Department is viewing and applying the default SCTL as the applicable cleanup standard, attached hereto as Attachments 1 and 2.

By example, the Technical Report requires the assumption that a person contacts soil from the property where he or she resides for 350 days a year (allowing for two weeks a year away from the residence for vacation) during a 30 year period. Further, parties are required to assume that on every one of those 350 days a year for 30 years, regardless whether it is hot or cold, or rainy or sunny, as a young child the person gets soil on his or her entire head and face, all sides of both hands, all sides of both forearms, all sides of both legs from the knees to the ankles, and tops and bottoms of both feet.

And, then as an adult, for 350 days a year, he or she gets soil on his or her head and face all sides of both hands, all sides of both forearms, and all sides of both legs from the knees to the ankles. Unlike in other jurisdictions, parties in Florida are not allowed to adjust these assumptions to reflect demographics, climate, and use patterns more typical to Florida because the Department takes the position that these assumptions are *not site specific*; a requirement not contained in the statute or necessary to protect Floridians to RBCA's risk thresholds. Attached hereto as Attachment 3 is a more detailed discussion of the technical support for this rulemaking request entitled *RBCA in Florida: Technical Facts Presented in Support of Changes to 62-777 and 62-780, F.A.C.*

4. The requirements to evaluate site-specific soil characteristics are unduly burdensome and unnecessary

Chapter 62-780.680 of the Department's rules requires soil ACTLs to be "established using site-specific soil properties pursuant to subparagraph 62-780.600(5)(c)2., F.A.C., and the equations and default residential exposure assumptions specified in Chapter 62-777, F.A.C., Figures 4, 5, 6, and 7 and Table VI" This focus on site-specific soil properties is overly restrictive, punitive, and not reflective of the statutory approach in RBCA. Ultimately, this means that parties seeking to establish soil ACTLs must conduct hugely expensive (and unnecessary) studies to comply with the Department's regulations, when, in most cases, well-vetted science of general applicability could be used instead. For example, AIF members have looked at engaging in such studies and found that a "site-specific" study regarding the bioavailability of just one chemical compound in site soil would likely cost more than \$200,000.00, despite there being voluminous scientific information available for many of the chemicals listed in the SCTL tables in Chapter 62-777. These resources are much better spent on site cleanup.


In addition, the Technical Report compounds the problems of focusing only on site-specific information when it specifically identifies and requires "site-specific information [which] can be substituted in order to obtain a more accurate SCTL, as well as some considerations in making site-specific modifications." See Technical Report at p. 46. In this section, the Department excludes several critical parameters from use in

determining ACTLs, because in the Department's view, such parameters are not sufficiently "site-specific". The excluded parameters include, but are not limited to, the explicitly identified "[v]alues that do not change from site to site," see Technical Report at p. 49, as well as all other parameters that are not explicitly authorized in the Technical Guidance as being "site-specific". In addition, the first paragraph of Section V.B.1. of the Technical Report states that "If site use is unrestricted or only broadly restricted...the default assumptions [used to calculate the default SCTLs] will represent the best choice" (*bracketed text added*). In many cases, this language amounts to a *de facto* rule that eliminates the possibility of using something other than the default parameters used to derive the SCTLs, be that site-specific data, better science, or simply common sense. In all such cases, the Department requires use of the generic, overly conservative parameters used by the Department to promulgate the default SCTLs (discussed above). The inflexibility of the Department to allow for meaningful construction of alternative limits is based on guidance that did not go through formal rulemaking procedures in keeping with Florida Due Process requirements, and fails to follow the directives of the Legislature to consider "actual circumstances of exposure" in Florida.

IV. Conclusion

AIF respectfully requests that Department of Environmental Protection GRANT this Petition to Initiate Rulemaking. If the Department grants this Petition to Initiate Rulemaking, the proposed rule amendments suggested in this Petition would address the concerns of AIF and its members. These amendments would provide the flexibility and certainty intended by the Legislature and the Department, provide the mechanisms for parties cleaning up contaminated sites to conduct environmentally protective, cost-effective, risk-based corrective action, and ultimately would accelerate the cleanup of these sites to get them back into productive use.

Respectfully submitted,



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Mimi A. Drew
Interim Secretary

September 14, 2010

Sent via email

William.Arrants@rayonier.com

Mr. William Arrants
President
Southern Wood Piedmont Company
Post Office Box 5447
Spartanburg, South Carolina 29304

SUBJECT: Description of Input Parameters Used to Define Alternative SCTLs for Dioxin,
dated June 9, 2010
Southern Wood Piedmont (SWP); FLD 004 053 450

Dear Mr. Arrants:

Thank you for submitting your proposal for alternative soil cleanup target levels (SCTLs) at the Southern Wood Piedmont site in Baldwin, Florida. The Department appreciates your attempt to come up with plausible approaches to the development of alternative SCTLs for dioxin contamination under a non-restricted use scenario. As discussed during our meeting with representatives of the facility on May 10, 2010, the Department believes that approaches in Chapter 62-780, FAC, for the development of alternative SCTLs need to be based on site specific conditions/factors.

In addition to a thorough review and careful consideration by department staff, we tasked our contracted risk assessment experts with the University of Florida to review the proposal. Enclosed is a review of the subject document submitted by the University of Florida on behalf of the Department. As indicated in the review document, the methodology and assumptions being proposed are not considered relevant to the development of a site-specific alternative SCTL, but rather a proposal for a new way of deriving a default residential SCTL for dioxin. In summary, none of the scientific issues raised in the proposal are considered unique or specific to the Southern Wood Piedmont site, and thus, not appropriate for a site-specific analysis.

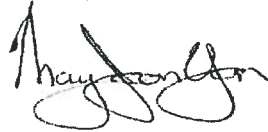
Therefore, the Department has determined that the proposal does not support the development of alternative site-specific SCTLs beyond SWP's property boundary, and that SWP should proceed with using the default SCTL (0.000007 mg/kg) for dioxin listed in Table

Mr. Arrants
September 14, 2010
Page Two

II of Chapter 62-777, FAC. The default SCTL should be used for assessment and site rehabilitation purposes at residential properties, and at other areas open to the public unless the property owner(s) agree to institutional and engineering controls.

Please contact Tim Bahr at 850-245-8790 or via email at Tim.Bahr@dep.state.fl.us if you would like to discuss these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Mary Jean Yon". The signature is fluid and cursive, with a prominent initial "M" and "J".

Mary Jean Yon, Director
Division of Waste Management

MJY/cs

Enclosure

cc (with enclosure)

Carla Yetter, Rayonier Carla.yetter@rayonier.com
Greg Council, GeoTrans, Inc. greg.council@geotransinc.com
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Secretary

March 28, 2010

Mr. Scott Miller
Remedial Project Manager
United States Environmental Protection Agency
Region IV, Superfund North Florida Section
61 Forsyth Street, SW
Atlanta, Georgia 30303

RE: Probabilistic Risk Assessment for onsite and offsite soils at the Koppers Superfund Site, Gainesville

Dear Scott:

DEP is following up on discussions at the January 2010 feasibility study meeting during which continued use of the probabilistic risk assessment was discussed to evaluate both onsite and offsite soil contamination associated with the Koppers site. Enclosed are comments from Drs. Roberts and Stuchal at University of Florida (UF) who have been providing support to DEP throughout the development of the risk assessment for the site.

With the closing of the Koppers facility, DEP understands that Beazer and AMEC will be re-assessing the onsite soil and sediment risk assuming a more general commercial/industrial scenario. In the enclosed correspondence, Dr. Roberts has identified the assumptions and distributions that are consistent with EPA regulations and guidelines and that would satisfy DEP in the evaluation of risk posed by onsite soils based on that scenario. Note that the assessment includes use of the HEAST cancer slope factor, default risk parameter distributions acceptable for most commercial/industrial sites, Relative Absorption Factors (RAFs) of 1 where site specific data is not available, and upper percentiles of risk from the risk distribution consistent with risk management practices in Florida (please refer to previous DEP correspondence dated December 11, 2009, including enclosures).

The above UF evaluation utilizes the same exposure units (EUs) proposed by AMEC in the August 2009 revised onsite risk assessment, except where noted and based on previous UF recommendations. With the details of future site development/land use unknown, Beazer may continue to use these EUs or propose alternative smaller EUs, as noted in the enclosed comments, to evaluate onsite risk and support remedy selection and implementation. However, re-evaluation of those exposure units will be required once

re-development plans are known to ensure continued protectiveness of the Superfund remedy and consistency of the proposed land use with the exposure assumptions and EUs. Pursuant to Chapter 62-780, FAC, the top two feet of exposed soils must meet cleanup goals protective for that land use and EU(s) with appropriate institutional controls to ensure the integrity of the remedy in the future. Soils with contaminant concentrations above leachability criteria (default or site specific) must also be addressed throughout the entire vadose zone.

DEP understands that Beazer /AMEC are also considering the use of a probabilistic risk assessment to address offsite soil contamination. Chapter 62-780 and 62-777, FAC, allow for use of probabilistic risk assessments. However, it is unclear to us how its use would result in numeric criteria substantially different from the default SCTLs for unrestricted use identified in Chapter 62-777. The exposure assumptions used to derive the default SCTLs are those that are acceptable to DEP to meet a 10^{-6} cancer risk or $HI \leq 1$ without institutional or engineering controls. Other than development of site-specific RAFs determined by a suitable in vivo bioavailability study, there appear to be few, if any, other variables open for adjustment in an unrestricted use scenario.

We hope this is helpful to EPA and Beazer/AMEC in ongoing efforts to finalize the risk assessment and soil cleanup goals. We are available to discuss this further if necessary.

Sincerely,



Kelsey Héltón
Bureau of Waste Cleanup

Enclosure

cc: Ligia Mora-Applegate, DEP

ATTACHMENT 3

RBCA in Florida:

Technical Facts Presented in Support of Changes to 62-777 and 62-780, F.A.C.

This document provides technical facts regarding Risk-Based Corrective Action (RBCA) rules and regulations in Florida. It describes the objectives of the RBCA program, the development of cleanup target levels (CTLs) and the sources of conservatism in the default CTLs.

I. Technical Objectives of RBCA in Florida

The purpose of the Florida RBCA statute (Section 376.30701, Florida Statutes) is to protect citizens against potential health risks associated with environmental contamination, while also providing a flexible, risk-based methodology for cleaning up contaminated sites in order to put them back into productive use. The philosophy behind the RBCA concept is that decisions regarding cleanup priorities and actions should be based on achieving acceptable risks through application of sound science, common sense, flexibility, and cost-effectiveness considerations.

For cancer risks, the specific Florida statutory objective is to ensure that exposure to environmental contamination from a regulated site does not increase the lifetime risk of cancer by more than one in one-million, expressed in shorthand as 1×10^{-6} . That is, the lifetime risk of developing cancer cannot be increased by more than 0.0001% due to exposure to known/possible carcinogenic contaminants. This goal is extremely conservative when weighed against the typical incidence of cancer in the United States. According to the American Cancer Society, on average a typical US male has a 44.29% chance of developing cancer in his lifetime. Stated another way, out of a population of 1,000,000 typical American males, approximately 442,900 are expected to develop cancer during their lifetime. A US female has a 37.76% chance of developing cancer in her lifetime (377,600 cases out of 1,000,000).

Also, for reference, at the federal level, USEPA uses a more flexible target range for increased cancer risk of 1×10^{-6} to 1×10^{-4} (0.01%, or one in-ten-thousand) when making risk management decisions. This allows USEPA to weigh the costs and risks of corrective actions against the potential benefit of reducing the likelihood of causing cancer from extremely low to (perhaps) even lower.

For non-cancer health effects, the Florida (and federal) objective is to ensure that the contaminant dose (amount of contaminant taken into the body) is no greater than a

conservatively derived *reference dose* (RfD). Reference doses are set at levels that will not cause adverse effects over a lifetime. The ratio of total contaminant intake to reference dose is called the hazard quotient (HQ) or hazard index (HI). RBCA's non-cancer protection objective is met when the hazard quotient or hazard index is one or less (estimated dose / RfD \leq 1).

II. Cleanup Target Levels

In Florida, *default* CTLs have been developed by the University of Florida (2005) for the Florida Department of Environmental Protection (Department) using conservative assumptions about exposure and contaminant toxicity. These default CTLs are codified in 62-777 F.A.C. and referenced in other regulations related to site investigation and remediation (e.g. 62-770, 62-780, 62-785). These default CTLs have been developed such that, if soil, groundwater, and surface-water concentrations are lower than these benchmarks, one can be assured that any risks posed by contamination are negligible. The default CTLs are purposefully designed to be conservative, with a "safety buffer" built in (University of Florida, 2005, p. 9). In fact, meeting these default benchmarks at a site ensures that the actual increase in cancer risk is significantly less than 1×10^{-6} and that the actual amount of contaminant taken in by an individual is significantly less than the dose that would actually cause a health effect. More details on the conservativeness built into the default CTLs are presented in the next section of this document.

The RBCA statute allows for *alternative* CTLs to be developed as long as they meet the statutory requirements of increased cancer risk no greater than 1×10^{-6} and HQ/HI no greater than one. However, the implementing regulations (particularly 62-780.680 F.A.C. at (1)(b)1.b.) severely and unnecessarily limit the methods by which one can demonstrate that the RBCA objectives related to acceptable risk are met. For example, for alternative residential soil exposure scenarios (without engineering or institutional controls), the vast majority of the default assumptions used by the Department to calculate the default CTLs are retained, and the regulations allow only limited adjustment to factors such as site-specific soil-properties. Such adjustments to physical soil properties (e.g. porosity, density) typically do not result in significant change to the default CTLs.

The Department's application of its regulations adds inflexibility in the derivation of alternative CTLs. For example, the Department professes to consider the *bioavailability* of contaminants from soil to be a soil property subject to adjustment in development of alternative CTLs. However (with the notable exception of arsenic), in practice, the Department has insisted that such an adjustment can only be based on site-specific information, requiring an expensive, site-specific bioavailability study even when there is ample scientific evidence of general applicability for reduced bioavailability of a contaminant from soils.

III. Conservative Assumptions Used in CTL Development

The default CTLs in 62-777 F.A.C. are derived from commonly applied risk-assessment equations that include terms for the exposure factors and toxicity factors pertinent to a particular route of chemical exposure. Exposure factors include the frequency and duration of an individual's exposure, the amount (mass or volume) of contaminated soil or water ingested, and the fraction of the ingested, inhaled, or contacted chemical that is absorbed into the body's blood or organs. Toxicity factors include cancer potency estimates and non-cancer reference doses for each regulated contaminant.

In development of default CTLs, the values assigned to the various terms in the risk-assessment equations are based partially on scientific studies and partially on conservative assumptions and conservative interpretations of the studies. The assumptions and interpretations are described in the University of Florida (2005) document that presents the derivation of the default CTLs.

Some of the conservative assumptions used in the development of default CTLs are listed below:

- 1) For exposure scenarios involving actual or potential residential use of contaminated property, it is assumed that residents are exposed to soil on the property 350 days per year for 30 years, starting at birth. That is, a person is born at a contaminated-soil residence, stays there for 30 years straight with no significant time away, and comes in contact with soil on all 350 days per year of residence. As noted in the University of Florida (2005) document, these assumptions for exposure frequency and duration are "upper bound" and "high-end" assumptions. These assumptions are also not specific to the population of Florida. One might expect, for instance, that the population of Florida is, in general, more transient than the nation as a whole. One may also expect that Floridians in general reduce their outdoor activity in the hot summer months, thereby reducing the potential for soil ingestion, inhalation and dermal contact.
- 2) It is also assumed that a resident ingests 120 milligrams of contaminated soil per day, averaged over the first 30 years of a lifetime. This means that a resident is assumed to eat a total of approximately 3 pounds of contaminated soil during the exposure period. The University of Florida (2005) document notes that this is based on "conservative" and "high-end" estimates for child (200 mg/d) and adult (50 mg/d) soil ingestion rates. It is also assumed that all of the soil ingested by an individual comes from the contaminated property (none from places of work, school, or recreation areas, for example).
- 3) The exposed skin surface area of a resident is assumed to average 5.2 square feet during the 30-year exposure period. The derivation of this surface area is complicated and is "reasonably conservative" according to the University of Florida (2005) document.

- 4) The average amount of contaminated soil that adheres to exposed skin is assumed to be 0.1 milligram per square centimeter on each day of the assumed 30 year exposure. The result is that approximately 11 pounds of contaminated soil is assumed to adhere to an individual's skin during the exposure period. This is a "high-end" assumption according to the University of Florida (2005) document. Again, it is also assumed that all of the soil adhering to an individual's skin comes from the contaminated property (none from places of work, school, or recreation, for example).
- 5) With one exception, it is assumed that any contaminant ingested in soil is 100% *bioavailable*, as if it were ingested in water. That means all of the contaminant mass is assumed to be absorbed into the blood and organs rather than passing through without absorption/uptake. An exception is made for arsenic, which is assumed to be 33% bioavailable from soil based on the conservative end of a range of results from studies done on soil samples from five Florida sites. But there are other contaminants (e.g., dioxins) for which substantial research indicates that bioavailability from soil is significantly less than 100%.
- 6) It is assumed that a resident weighs, on average, 114 pounds during the 30 year exposure period. Current population data indicate this is an underestimate of average body weight. An underestimated weight results in greater assumed doses and more conservative CTLs because doses are normalized by body weight.
- 7) For groundwater exposure, it is assumed that contaminated groundwater ingestion occurs every day for a lifetime (70 years). This is highly unlikely to occur in reality.
- 8) It is also assumed that a person ingests 2 liters (approximately one half gallon) of contaminated groundwater per day. According to the University of Florida (2005) this corresponds to the 84th percentile of water intake statistics, making it a somewhat conservative assumption (the mean water intake is 1.3 liters/day). Furthermore, it is assumed that all of the water consumption is from the contaminated source.
- 9) The cancer potency of each known/probable carcinogenic contaminant is estimated based on upper-percentile (conservative) estimates, generally taken from lab animal studies and fit to a simplistic (linear) dose-response relationship. For some contaminants there is considerable scientific debate and no scientific consensus on the appropriate assumption for cancer potency.
- 10) In development of default groundwater CTLs for non-carcinogens, the reference (allowable safe) dose is reduced by a factor of five (relative source contribution = 20%) to ostensibly account for getting 80% of the allowable dose from other sources (e.g. food, air). As noted by the University of Florida (2005), this is a very conservative

adjustment for most contaminants because most contaminants are not found in significant concentrations in food, nutritional supplements, other consumer products, or ambient air. This assumption is not based on any scientific study of contaminants in products.

- 11) For possible (class C) carcinogens which by definition have no defined numerical cancer potency factor, the reference (allowable) non-cancer dose is further reduced by a factor of ten (a factor of fifty [5 x 10] altogether). There is no scientific basis for this reduction.
- 12) The reference (allowable safe) doses of chemicals typically include several multiplicative safety factors. The result is that the reference doses used in setting non-cancer CTLs are typically several orders of magnitude lower than the no effect doses determined from toxicity studies. According to the University of Florida (2005) document, the reference doses listed in the principal information source (the USEPA database called IRIS) have a median safety factor of 300, an average safety factor of 887, and a maximum safety factor of 12,000.

Many of these selected assumptions are the upper percentiles of collected data and represent the upper bound of reasonable interpretation. Importantly, the combination of multiple conservative assumptions in the risk assessment equations results in extraordinary aggregate conservatism in the final derived CTL. For example, if the 85th percentile assumption is chosen for three individual variables for a given exposure route, the result is a CTL protective of the most exposed 0.3% of the population (i.e. the 99.7 percentile exposure scenario). This is well beyond what USEPA and FDEP consider *reasonable maximum exposure*. Typically, the 90th or 95th percentile is used to define the reasonable maximum exposure scenario. Since toxicity estimates typically have orders-of-magnitude conservatism already incorporated, it is clear that the actual risks implied by the default CTLs are much more protective than the allowable 1×10^{-6} increased cancer risk and hazard quotient of one. The “safety buffer” (University of Florida, 2005, p. 9) built in to the default CTLs as a result of multiple conservative assumptions is extraordinary.

IV. Reference

University of Florida, 2005. *Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, F.A.C.* Center for Environmental & Human Toxicology, Gainesville, Florida. Prepared for FDEP Division of Waste Management.