

2000 Risk Assessment Procedures Manual (RAPM) vs. proposed 2015 RAPM

The two documents differ significantly in not only content updated over fifteen years but also organization and presentation. In comparison to the 2015 update, the 2000 RAPM is more prescriptive with its reliance on checklists and lacks the same level of planning guidance for the user that is now available in the 2015 version.

As the 2015 RAPM has been completely reorganized from its 2000 predecessor, a more meaningful comparison can be made by comparing the significant risk assessment planning and reporting features. The following table is a side-by-side comparison of specific changes that may impact how a risk assessment is performed and the results of the assessment. In **boldface** on the left is the relevant topic and its respective page number in the currently adopted 2000 version. Presented on the right is the description of the change and new page number in the 2015 version proposed for re-adoption-by-reference.

2000 RAPM	2015 RAPM
<p>Toxicity Hierarchy</p> <ul style="list-style-type: none"> 1) Integrated Risk Information System (IRIS) 2) Health Effects Assessment Summary Table (HEAST) 3) EPA Environmental Community Outreach Association (ECO) Criteria Documents 4) Other professionally peer reviewed documents <p>Pages 17 and 49</p>	<p>Changed to three tiers:</p> <ul style="list-style-type: none"> 1) IRIS 2) Provisional Peer-Reviewed Toxicity (PPRTV) 3) Other toxicity values <p>Page 20</p>
<p>Exposure Parameters</p> <p>No default exposure parameters presented</p>	<p>2014 exposure parameters based on EPA superfund program.</p> <p>Page 16</p>
<p>Child receptor</p> <p>Vague with no direction.</p>	<p>A section on evaluating risks from childhood exposure. Add requirement for chronic assessment for 6- year childhood exposure for residential scenario.</p> <p>Pg 26 and 27</p>

2000 Risk Assessment Procedures Manual (RAPM) vs. proposed 2015 RAPM

<p>Exposure Area There is no clear definition of the exposure area. Different land uses are presented with default definitions.</p> <p>Pages 20 & 44</p>	<p>Clearer guidance defines the source area as the exposure area. EPA guidance document is used as a reference to further explain risk assessment considerations regarding the exposure area.</p> <p>Page 17</p>
<p>Data Usability No defined process is presented; only a statement that data usability must be discussed and approved by ADEC.</p> <p>Page 26</p>	<p>Provides a list of criteria that must be met to ensure data usability.</p> <p>Page 9</p>
<p>Reasonable Maximum Exposure & Exposure Point Concentrations A short paragraph is presented with no direction on how to calculate the 95th percentile of the actual distribution.</p> <p>Pages 19 & 44</p>	<p>The updated section gives a clear presentation on how to calculate the 95% upper confidence limit using the recommended EPA ProUCL 4.1.00 statistical software package.</p> <p>Page 18</p>
<p>Groundwater sample Groundwater from a single well should use the 95% UCL average concentration.</p> <p>Page 45</p>	<p>The maximum concentration in groundwater is now used in accordance with 18 AAC 75.380 (c)(2) for a compliance determination.</p> <p>Page 18</p>
<p>Handling of nondetects The explanation is general. Computerized methods, such as iterative maximum likelihood calculations, are available for estimating the true means and variances of censored data set.</p> <p>Page 33</p>	<p>A clearer recommendation is suggested such as using the Kaplan Meyer method or bootstrapping with the EPA ProUCL 4.1.00 software.</p> <p>Page 19</p>

2000 Risk Assessment Procedures Manual (RAPM) vs. proposed 2015 RAPM

<p>Types of exposures: chronic, subchronic and acute The current requirement for using subchronic effects toxicity values is “should be changed from standard protocol to reflect the shorter exposure duration.”</p> <p>Page 45</p>	<p>More requirements are established for using subchronic values.</p> <ol style="list-style-type: none"> 1) Subchronic toxicity values may not be derived from chronic toxicity values using additional uncertainty factors based on the study used to develop the chronic toxicity value. 2) Use of subchronic toxicity values must be approved by the DEC risk assessor prior to use in the risk assessment. <p>Page 25</p>
<p>Materials removed:</p> <ul style="list-style-type: none"> -Conceptual Site Model (CSM), pp. 9-15. A separate guidance document is currently provided to supplement the 2015 RAPM. -Ecological scientific/ management decision points, pp. 22-23. The current ecoscoping guidance provides more detail in addressing the issue. -Tables on data presentations/ecological check lists, pp. 71-87. 	<p>Materials included:</p> <ul style="list-style-type: none"> -Summary of default exposure parameters in Table 1, pg 16 -Requirement for appropriate risk screening criteria for biota used as subsistence foods, pg 13 -Direction regarding data reduction and field duplicate samples, pg 19 -Exposure route equations are presented on pg 21 and pg 22 -Guidance is provided regarding use of Toxicity Equivalence Factors, pg 22 -Special consideration is provided for lead and bulk hydrocarbon, pg 23-24 -Evaluating carcinogenic risk from childhood exposures, pg 26 and pg 27 -Direction regarding the calculation of Cumulative Risk, pg 27 and pg 28 -Direction regarding preparation of an Ecoscoping evaluation, pg 31