

## Checklist for the In-Depth Toxicological Effects Analysis

Health assessors: As needed, consult with your site team members and technical specialists such as toxicologists and epidemiologists to help interpret and identify information and discuss approaches. Follow the decision-logic diagram in this section to know which action items listed will apply to your site-specific evaluation (e.g., evaluating a contaminant that has a health guideline, evaluating cancer effects for a known carcinogen with no cancer potency factor [also called a cancer risk value]).

Action Item	Assessor's Findings/Notes
Identify and review relevant data from studies used to develop <i>non-cancer</i> health guidelines (e.g., ATSDR Tox Profiles [MRL Worksheet], EPA IRIS).	
If warranted, review original journal article(s) that served as the basis for the <i>non-cancer</i> health guidelines.	
If warranted, review more recent <i>non-cancer</i> studies.	
Evaluate the available evidence to determine the potential for <i>non-cancer</i> effects under site-specific conditions: <ul style="list-style-type: none"> <li><input type="checkbox"/> Compare site-specific doses and concentrations to observed study effect levels ("margin of exposure")</li> <li><input type="checkbox"/> Consider study applicability to site-specific exposures (e.g., duration, exposure route, chemical form)</li> <li><input type="checkbox"/> Examine uncertainty</li> </ul>	
Evaluate the available evidence to determine the potential for <i>cancer</i> effects under site-specific conditions when there <u>is</u> a cancer potency factor or unit risk that enabled a cancer risk estimate: <ul style="list-style-type: none"> <li><input type="checkbox"/> Examine the types of cancer that are possible</li> <li><input type="checkbox"/> Convey and explain the cancer classifications</li> <li><input type="checkbox"/> Decide whether cancer risks greater than 1E-6 could be a concern or not.</li> <li><input type="checkbox"/> Consider study applicability to site-specific exposures (e.g., duration, exposure route)</li> <li><input type="checkbox"/> Examine uncertainty</li> </ul>	

Action Item	Assessor's Findings/Notes
<p>Evaluate the available evidence to determine the potential for <i>cancer</i> effects under site-specific conditions when there is <u>no</u> cancer potency factor or unit risk that enabled a cancer risk estimate:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Indicate that quantitative risk estimates are not possible and provide context.</li> <li><input type="checkbox"/> Include highlights from studies supporting the contaminant being a carcinogen, if warranted.</li> <li><input type="checkbox"/> Include information on how you identified the contaminant as a carcinogen (e.g., cancer classification).</li> <li><input type="checkbox"/> Indicate what is known in a qualitative way.</li> <li><input type="checkbox"/> Consult with a toxicologist if there is information on exposure doses that caused cancer to see if it is appropriate to compare them to site-specific doses.</li> </ul>	
<p>Review toxicological data for other health effects with doses or air concentrations similar to those for your site. Compare your site-specific doses or concentrations to the Levels of Significant Exposure (LSE) tables and figures in ATSDR's Toxicological Profiles and other sources/studies of health effects information.</p>	
<p>Review other contaminant-specific toxicological information that may influence the impact of site exposures (e.g., toxicokinetics, sensitive populations and life stages, multiple chemical exposures).</p>	
<p>Evaluate available site-specific health effects data (e.g., health outcome, biological, and medical data).</p>	
<p>If warranted, describe possible harmful effects in the exposed population.</p>	
<p>If warranted, integrate exposure and health effects data into public health documents to provide a balanced perspective on:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Exposure data</li> <li><input type="checkbox"/> Toxicologic data</li> <li><input type="checkbox"/> Epidemiologic data</li> <li><input type="checkbox"/> Health outcome data</li> <li><input type="checkbox"/> Special characteristics of exposed population</li> </ul>	

Action Item	Assessor's Findings/Notes
<input type="checkbox"/> Multiple chemical exposures <input type="checkbox"/> Uncertainty	
Develop narratives for incorporation into your site documents, integrating exposure and health effects data, that provide a balanced perspective of the in-depth analysis findings (i.e., what is known and not known).	