

US EPA ARCHIVE DOCUMENT

**Summary of the Studies Related to Arsenic and Chromium Residue Concentration
Data from CCA-Contaminated Soil**

STUDY	UNCERTAINTIES AND LIMITATIONS	STRENGTH OF THE DATA SET	Will OPP use data ?
Riedel et al. (1991)	<ol style="list-style-type: none"> 1. A description of field and laboratory QA/QC procedures were not provided in the study report. 2. In addition, field fortification recovery testing was not provided. 3. An adequate description of dates of field collection and shipment and transport to the analytical laboratory was not provided in the Study Report. 	<ol style="list-style-type: none"> 1. This data set provides results for both wipe residues and soil samples. 2. It provides detail analytical and sampling methodologies used for data collection. 3. The number of sites used for data collection is large with enough replications. 	Yes
Doyle (1992) & Malaiyandi (1993)	<ol style="list-style-type: none"> 1. A description of field and laboratory QA/QC procedures were not provided in the study report. In addition, field fortification recovery testing was not provided. 2. It could not be determined from the study report how long the time interval was between collection and analysis and whether prolonged storage could have influenced the field recovery concentrations. 	<ol style="list-style-type: none"> 1. Provides good information about soil samples in the playgrounds. 	Yes

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<p>Stilwell & Gorny (1997)</p>	<ol style="list-style-type: none"> 1. Information was not provided on the overall method validation or method recoveries. 2. Field recovery information and QA/QC was not provided. 3. It could not be determined from the Study Report whether the time interval between collection and analysis and prolonged storage could influence the field recovery concentrations. 4. Formal statistical methods were not presented in this study report. 5. Field fortification recovery testing was not provided. 	<ol style="list-style-type: none"> 1. It provides information related to arsenic concentrations in soils under decks treated with CCA. 	<p>Yes</p>
<p>Osmose (2000)</p>	<ol style="list-style-type: none"> 1. The specific type of CCA used to treat the wood was not described. 2. Information on the climatological conditions of the tests site to determine the extent of leaching was not provided. 3. Field fortifications data were not provided in the study report. 4. Field recovery information was not provided in the study report. 5. Information was not provided on the overall method validation or method recoveries. 6. Core samples were mistakenly collected at a depth of one foot for the control instead of surface soil samples. 7. An adequate description of dates of field collection and shipment and transport to the analytical laboratory was not provided. 8. It could not be determined from the study report the time interval between collection and analysis and whether prolonged storage could influence the field recovery concentrations. 	<ol style="list-style-type: none"> 1. Number of soil and wipe samples taken from different are large enough (84 samples) for statistical analyses of the data. 2. The methodologies used for sampling and laboratory analyses are scientifically sound. 3. Provide data for both medium and old aged decks. 	<p>Yes</p>

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<p>Townsend & Solo-Gabriele (2001)</p>	<ol style="list-style-type: none"> 1. The study does not provide relevant information for developing sampling regimes for the playground equipment scenarios. 2. Percent of organic carbon in the soils were not identified 3. The analytical method used for the determination of the metal concentrations provides only total recoverable or total extractable but not the true or 'total-total' amounts of arsenic, chromium or other metals. 4. The data are on Florida soils only and more data on other types of soils in North America are needed. 	<ol style="list-style-type: none"> 1. Sample collection method (grid-method) was defined in a concise manner. 2. Standard methods from APHA and EPA were used for digestion and analyses of metals. 3. The study clearly shows that the metals leach from treated wood and elevated levels of these metals around the deck areas are possible concerns. 4. Soil classification is identified. 5. It is a field study and field studies provide more 'realistic data' for analysis and risk assessment .This study was conducted at various locations within Florida and it gives a good statistical mix for analysis. 6. Background concentrations of arsenic and chromium found in Florida soils is provided. 	<p>Yes</p>
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