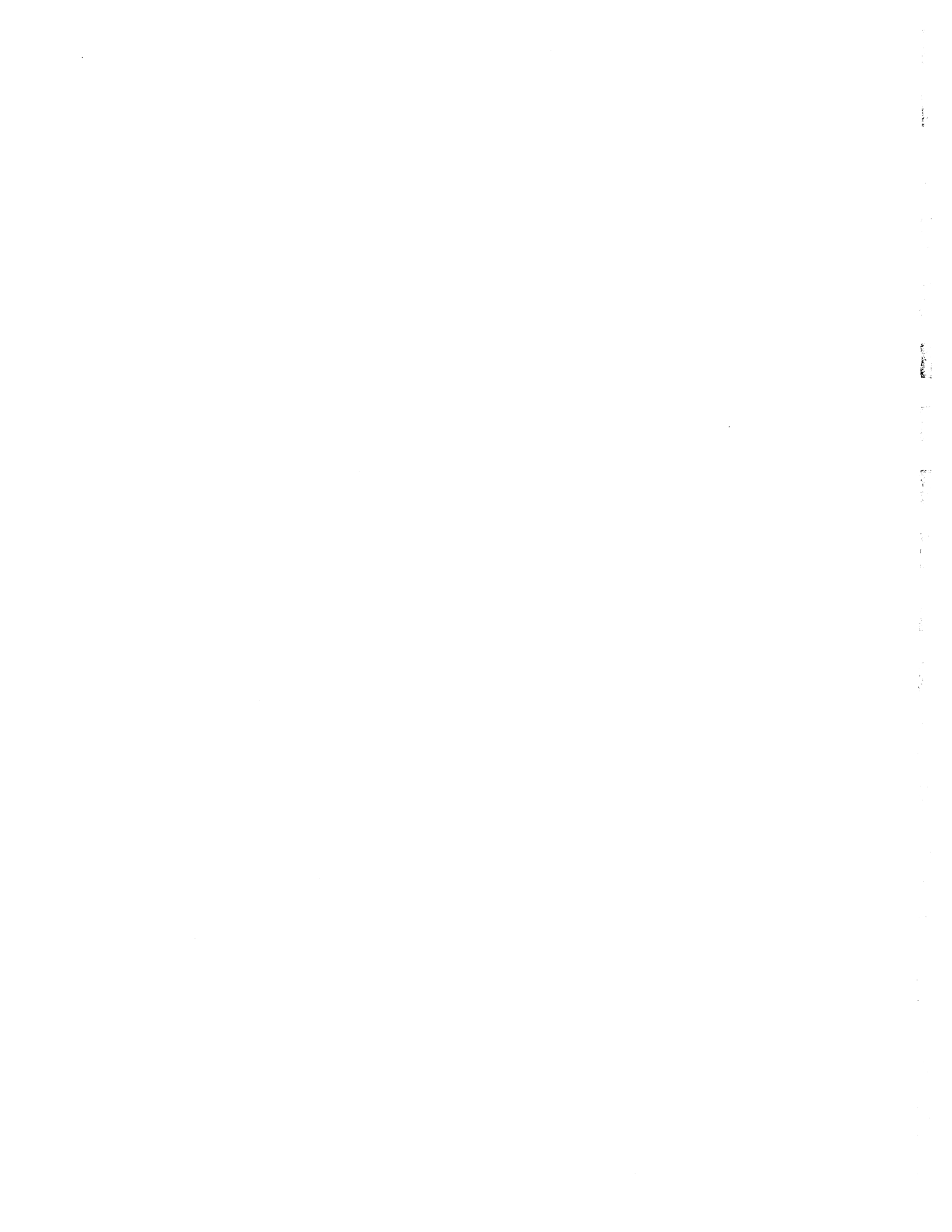


CANTOX ENVIRONMENTAL

**DELORO VILLAGE
EXPOSURE ASSESSMENT AND HEALTH RISK
CHARACTERIZATION FOR ARSENIC AND OTHER
METALS**

**PART 4 - TOXICOLOGICAL REVIEW FOR ARSENIC
AND OTHER METALS**

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**PART 4
TOXICOLOGICAL REVIEW OF ARSENIC AND OTHER METALS**

Table of Contents

	Page
4.1.0 INTRODUCTION	4.1-1
4.2.0 PHARMACOKINETICS AND TOXICOLOGY: ARSENIC	4.2-1
4.3.0 TOXICOLOGICAL REVIEW: LEAD	4.3-1
4.4.0 TOXICOLOGICAL REVIEW: COBALT	4.4-1
4.5.0 TOXICOLOGICAL REVIEW: NICKEL	4.5-1
4.6.0 TOXICOLOGICAL REVIEW: SILVER	4.6-1



**PART 4.1
TOXICOLOGICAL REVIEW OF ARSENIC AND OTHER METALS**

Table of Contents

	Page
4.1.0 INTRODUCTION	4.1-1



PART 4.1
TOXICOLOGICAL REVIEW OF ARSENIC AND OTHER METALS

4.1.0 INTRODUCTION

This Part contains critical literature on the health effects, exposure limits and bioavailability of chemicals of concern for the current assessment. The general purpose of this Part is not to provide a complex dissertation discussing every published study on every chemical. Rather, it is meant to provide a review of crucial studies only, for the purpose of establishing an exposure limit or a concentration of each chemical of concern that a person could be exposed to on a daily basis without expecting to incur adverse health effects. In the case of arsenic, given the level of concern regarding exposure to this chemical, a comprehensive review of pharmacokinetics, toxicology and carcinogenicity was conducted, and is presented here.

The methodology used in the derivation of exposure limits, as well as the importance of consideration of bioavailability in hazard assessment, are detailed in Part 2, Section 3.0. In general, for the current assessment, regulatory-based exposure limits were identified from the scientific literature, where available. A literature review was undertaken in order to provide information on the toxicological database for each of the chemicals of concern. The studies that form the bases of the exposure limits were discussed in conjunction with other important studies and critical literature that has been published since the derivation of the exposure limit. The types of studies presented within the hazard assessment include both long- and short-term studies on animals and humans, where data were available. A lack of inclusion of certain types of studies (*e.g.*, reproductive, multi-generational, human studies) indicates that either these types of studies were not identified for the particular chemical of concern in the literature reviewed or that the data located were considered irrelevant.

In some cases there were no specific data regarding the bioavailability of a chemical following respiratory exposure. In these instances, the bioavailability following inhalation was estimated, based on airborne particle dynamics in the human respiratory system and on the environmental behaviours of chemicals in relation to tendency to be present in a vapour state versus adsorbed to particulate matter. A detailed discussion of these issues, and how they were applied to the current risk assessment, is provided in Appendix A.

Part 4.2
PHARMACOKINETICS AND TOXICOLOGY: ARSENIC

Table of Contents

	Page
4.2.1 PHARMACOKINETICS	1
4.2.1.1 Absorption	1
4.2.1.1.1 <i>Absorption Following Oral Exposure</i>	1
4.2.1.1.2 <i>Absorption Following Inhalation Exposure</i>	3
4.2.1.1.3 <i>Absorption Following Dermal Exposure</i>	4
4.2.1.2 Distribution	4
4.2.1.3 Metabolism	6
4.2.1.3.1 <i>Differences in Individual Methylation Capacity</i>	8
4.2.1.3.1.1 <u>Individual Differences Independent of Exposure Levels</u>	8
4.2.1.3.1.2 <u>Threshold of Methylation Theory</u>	9
4.2.1.4 Excretion	10
4.2.1.5 Urinary Excretion as a Bioindicator of Daily Exposure to Inorganic Arsenic	12
4.2.1.5.1 <i>Relationship Between Arsenic Exposure and Urinary Excretion</i>	12
4.2.1.5.2 <i>The Urinary Speciated Arsenic - Daily Exposure Model</i>	14
4.2.2 Toxicology	17
4.2.2.1 Systemic Toxicity	17
4.2.2.1.1 <i>Animal Studies</i>	17
4.2.2.1.2 <i>Human Studies</i>	19
4.2.2.2 Reproductive and Developmental Toxicity	21
4.2.2.2.1 <i>Animal Studies</i>	21
4.2.2.2.2 <i>Human Studies</i>	23
4.2.2.3 Genotoxicity	24
4.2.2.3.1 <i>In Vitro - Bacterial Systems</i>	24
4.2.2.3.2 <i>In Vitro - Mammalian Systems</i>	24
4.2.2.3.3 <i>In Vivo - Mammalian Systems</i>	25
4.2.2.4 Carcinogenicity	26
4.2.2.4.1 <i>Animal Studies</i>	26
4.2.2.4.2 <i>Human Studies - Inhalation</i>	27
4.2.2.4.3 <i>Human Studies - Oral</i>	30
4.2.2.4.4 <i>Mechanism of Action</i>	33
4.2.2.4.4.1 <u>Role of Arsenic in Carcinogenicity</u>	33
4.2.2.4.4.2 <u>Theories on Mechanism of Action</u>	34
4.2.2.4.4.3 <u>Toxicological Significance of the Threshold of Methylation Theory</u>	37

Part 4.2
Table of Contents (Continued)

	Page
4.2.2.4.5 <i>Extrapolation from Cancer Risk Factors to Typical Environmental Exposures</i>	38
4.2.2.4.5.1 <u>Uncertainties in Tseng <i>et al.</i> Studies</u>	39
4.2.2.4.5.2 <u>Validation of the Dose-Response Curve at Low Exposure Rates</u>	40
4.2.2.4.5.3 <u>Consideration of Sensitive Subpopulations</u>	42
4.2.2.5 Exposure Limits	42
4.2.2.5.1 <i>Oral Exposure Limit</i>	43
4.2.2.5.2 <i>Inhalation Exposure Limit</i>	44
4.2.2.5.3 <i>Dermal Exposure Limit</i>	45
4.2.2.5.4 <i>Bioavailability Values for Use in Assessment</i>	45
4.2.3 References	45