

**Appendix B: Summary of Non-Carcinogenic Daily Doses of Arsenic Resulting from Short-Term Pica Behavior**

**Appendix B. Non-Carcinogenic CoCs - Sporadic or Short-Term Pica**

**HQ - 3.2<sub>P2/365</sub> Ingestion of NonCarcinogenic CoCs in Soil (Pica Behavior x 2 days out of 365) - <sup>Soil</sup>HQ<sub>PCh.Ing.NC</sub>**

Item #	Exposure Factor	Term	Value	Units
1	CoC Concentration in Soil (mg As/kg soil)	Conc <sub>Soil</sub>	46.00	mg As/kg soil
2	Soil Ingestion Rate - Pica Child - Residential (mg/day)	IR <sub>Soil.PCh.Res</sub>	5000	mg soil/day
3	Conversion Factor (mg soil to kg soil)	CF <sub>mg:kg</sub>	1.00E-06	kg soil/mg soil
4	Exposure days - Pica Child - Residential (days/yr)	EF <sub>PCh.Res</sub>	2	days/yr
5	Relative Bioavailability Factor (unitless)	RBAF	0.4	-
6	Acute Oral LOAEL for Serious Effects <sup>1</sup> (mg/kg/day)	LOAEL <sub>Ac.Or</sub>	0.05	mg As/kg BW/day
7	Average Body Weight - Child 0-6 (kg)	Avg <sub>BW</sub> <sub>Ch 0-6</sub>	15	kg BW
8	Days per Year	DpY	365	days/yr
<b>HQ - 3.2<sub>P2/365</sub></b>	<b>Annualized HQ for Short-Term Pica Soil Ing - 2/365</b>	<sup>Soil</sup> HQ <sub>PCh.Ing.NC</sub>	<b>0.00067</b>	-
<b>DD - 3.2<sub>P2/365</sub></b>	<b>Annualized DD of As, Short-Term Pica Soil Ingest.</b>	<sup>Soil</sup> Dose <sub>PCh.Ing.NC</sub>	<b>3.361E-05</b>	<b>mg As/kg BW/day</b>

<sup>1</sup>Acute Oral LOAEL for Serious Effects = 0.05 mg/kg/day with 2-3 week exposure duration (Mizuta et al., 1956)

**HQ - 3.2<sub>P2/14</sub> Ingestion of NonCarcinogenic CoCs in Soil (Pica Behavior x 2 days out of 14) - <sup>Soil</sup>HQ<sub>PCh.Ing.NC</sub>**

Item #	Exposure Factor	Term	Value	Units
1	CoC Concentration in Soil (mg As/kg soil)	Conc <sub>Soil</sub>	46.00	mg As/kg soil
2	Soil Ingestion Rate - Pica Child - Residential (mg/day)	IR <sub>Soil.PCh.Res</sub>	5000	mg soil/day
3	Conversion Factor (mg soil to kg soil)	CF <sub>mg:kg</sub>	1.00E-06	kg soil/mg soil
4	Exposure days - Pica Child - Residential (days/yr)	EF <sub>PCh.Res</sub>	2	days/yr
5	Relative Bioavailability Factor (unitless)	RBAF	0.4	-
6	Acute Oral LOAEL for Serious Effects <sup>1</sup> (mg/kg/day)	LOAEL <sub>Ac.Or</sub>	0.05	mg As/kg BW/day
7	Average Body Weight - Child 0-6 (kg)	Avg <sub>BW</sub> <sub>Ch 0-6</sub>	15	kg BW
8	Days Exposure Producing Less Serious to Serious Symptoms	DpS	14	days/yr
<b>HQ - 3.2<sub>P2/14</sub></b>	<b>HQ for Short-Term Pica Soil Ingestion - 2/14</b>	<sup>Soil</sup> HQ <sub>PCh.Ing.NC</sub>	<b>0.01752</b>	-
<b>DD - 3.2<sub>P2/14</sub></b>	<b>Daily Dose of As, Short-Term Pica Soil Ingestion</b>	<sup>Soil</sup> Dose <sub>PCh.Ing.NC</sub>	<b>8.762E-04</b>	<b>mg As/kg BW/day</b>

<sup>1</sup>Acute Oral LOAEL for Serious Effects = 0.05 mg/kg/day with 2-3 week exposure duration (Mizuta et al., 1956)

**Appendix B. Non-Carcinogenic CoCs - Sporadic or Short-Term Pica**

**HQ - 3.2<sub>P14/14</sub> Ingestion of NonCarcinogenic CoCs in Soil (Pica Behavior x 14 days out of 14) - <sup>Soil</sup>HQ<sub>PCh.Ing.NC</sub>**

Item #	Exposure Factor	Term	Value	Units
1	CoC Concentration in Soil (mg As/kg soil)	Conc <sub>Soil</sub>	46.00	mg As/kg soil
2	Soil Ingestion Rate - Pica Child - Residential (mg/day)	IR <sub>Soil.PCh.Res</sub>	5000	mg soil/day
3	Conversion Factor (mg soil to kg soil)	CF <sub>mg:kg</sub>	1.00E-06	kg soil/mg soil
4	Exposure days - Pica Child - Residential (days/yr)	EF <sub>PCh.Res</sub>	14	days/yr
5	Relative Bioavailability Factor (unitless)	RBAF	0.4	-
6	Acute Oral LOAEL for Serious Effects <sup>1</sup> (mg/kg/day)	LOAEL <sub>Ac.Or</sub>	0.05	mg As/kg BW/day
7	Average Body Weight - Child 0-6 (kg)	<sup>Avg</sup> BW <sub>Ch 0-6</sub>	15	kg BW
8	Days Exposure Producing Less Serious to Serious Symptoms	DpS	14	days/yr
<b>HQ - 3.2<sub>P14/14</sub></b>	<b>HQ for Short-Term Pica Soil Ingestion - 14/14</b>	<sup>Soil</sup> HQ <sub>PCh.Ing.NC</sub>	<b>0.12267</b>	<b>-</b>
<b>DD - 3.2<sub>P14/14</sub></b>	<b>Daily Dose of As, Short-Term Pica Soil Ingestion</b>	<sup>Soil</sup> Dose <sub>PCh.Ing.NC</sub>	<b>6.133E-03</b>	<b>mg As/kg BW/day</b>

<sup>1</sup>Acute Oral LOAEL for Serious Effects = 0.05 mg/kg/day with 2-3 week exposure duration (Mizuta et al., 1956)

**RBEL 3.2<sub>LOAEL</sub> - Soil Arsenic Concentration Needed to Exceed the Acute LOAEL<sup>1</sup> for Serious Effects for Arsenic Under Soil Pica Conditions (assuming a 15 kg child ingesting 5,000 mg soil per day for 2-3 weeks)**

Item #	Exposure Factor	Term	Value	Units
1	Acute Oral LOAEL for Serious Effects <sup>1</sup> (mg/kg/day)	LOAEL <sub>Ac.Or</sub>	0.05	mg As/kg BW/day
2	Hazard Quotient for Short-Term Pica Soil Ingestion	<sup>Soil</sup> HQ <sub>P.Ing.NC</sub>	1.00000	-
3	Average Body Weight - Child 0-6 (kg)	<sup>Avg</sup> BW <sub>Ch 0-6</sub>	15	kg BW
4	Days Exposure Producing Less Serious to Serious Symptoms	DpS	14	days/yr
5	Soil Ingestion Rate - Pica Child - Residential (mg/day)	IR <sub>Soil.PCh.Res</sub>	5000	mg soil/day
6	Conversion Factor (mg soil to kg soil)	CF <sub>mg:kg</sub>	1.00E-06	kg soil/mg soil
7	Exposure days - Pica Child - Residential (days/yr)	EF <sub>PCh.Res</sub>	14	days/yr
8	Relative Bioavailability Factor (unitless)	RBAF	0.4	-
<sup>Soil</sup> Conc <sub>LOAEL</sub>	<b>CoC Concentration in Soil (mg As/kg soil)</b>	<sup>Soil</sup> RBEL <sub>PCh.14</sub>	<b>375.00</b>	<b>mg As/kg soil</b>
<b>DD - 3.2<sub>P14/14</sub></b>	<b>Daily Dose of As, Short-Term Pica Soil Ingestion</b>	<sup>Soil</sup> Dose <sub>PCh.Ing.NC</sub>	<b>0.0500</b>	<b>mg As/kg BW/day</b>

<sup>1</sup>Acute Oral LOAEL for Serious Effects = 0.05 mg/kg/day with 2-3 week exposure duration (Mizuta et al., 1956)