

TABLE 8.0
CALCULATION OF CANCER RISKS

TABLE 8.1.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Soils
 Exposure Medium: Surface Soil/Sludge
 Exposure Point: Lagoon 1
 Receptor Population: Trespasser
 Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	9.0E-02	mg/kg	9.0E-02	mg/kg	M	4.7E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.4E-08
	Dioxin TEQ	2.1E-04	mg/kg	2.1E-04	mg/kg	M	1.1E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.6E-06
	Antimony	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.2E-07	mg/kg-day	N/A	N/A	N/A
	Arsenic	1.3E+01	mg/kg	1.3E+01	mg/kg	M	6.7E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.0E-06
	Cadmium	7.6E+00	mg/kg	7.6E+00	mg/kg	M	4.0E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	3.8E+03	mg/kg	3.8E+03	mg/kg	M	2.0E-04	mg/kg-day	N/A	N/A	N/A
	Manganese	8.9E+02	mg/kg	8.9E+02	mg/kg	M	4.7E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.0E-07	mg/kg-day	N/A	N/A	N/A
	Thallium	1.4E+01	mg/kg	1.4E+01	mg/kg	M	7.4E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										2.7E-06
Dermal	Benzo(a)pyrene	9.0E-02	mg/kg	9.0E-02	mg/kg	M	6.6E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.8E-08
	Dioxin TEQ	2.1E-04	mg/kg	2.1E-04	mg/kg	M	3.5E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.3E-07
	Arsenic	1.3E+01	mg/kg	1.3E+01	mg/kg	M	2.2E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.3E-07
	Cadmium	7.6E+00	mg/kg	7.6E+00	mg/kg	M	4.3E-09	mg/kg-day	N/A	N/A	N/A
		(Total)									9.0E-07
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1.5E-05

TABLE 8.1.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 1
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	9.0E-02	mg/kg	9.0E-02	mg/kg	M	5.9E-10	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.3E-09
	Dioxin TEQ	5.3E-05	mg/kg	5.3E-05	mg/kg	M	3.4E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.2E-08
	Antimony	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.5E-08	mg/kg-day	N/A	N/A	N/A
	Arsenic	1.3E+01	mg/kg	1.3E+01	mg/kg	M	8.4E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.3E-07
	Cadmium	2.6E+00	mg/kg	2.6E+00	mg/kg	M	1.7E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	1.2E+03	mg/kg	1.2E+03	mg/kg	M	7.8E-06	mg/kg-day	N/A	N/A	N/A
	Manganese	8.9E+02	mg/kg	8.9E+02	mg/kg	M	5.8E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-01	mg/kg	5.0E-01	mg/kg	M	3.3E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	5.4E+00	mg/kg	5.4E+00	mg/kg	M	3.5E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										1.8E-07
Dermal	Benzo(a)pyrene	9.0E-02	mg/kg	9.0E-02	mg/kg	M	1.7E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.2E-08
	Dioxin TEQ	5.3E-05	mg/kg	5.3E-05	mg/kg	M	2.2E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.4E-06
	Arsenic	1.3E+01	mg/kg	1.3E+01	mg/kg	M	5.4E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.1E-08
	Cadmium	2.6E+00	mg/kg	2.6E+00	mg/kg	M	3.7E-10	mg/kg-day	N/A	N/A	N/A
		(Total)									1.3E-07
Total Risk Across All Exposure Routes/Pathways											3E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

7.5E-07

TABLE 8.2.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 2
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.7E-04	mg/kg	2.7E-04	mg/kg	M	1.4E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.1E-06
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	2.1E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.2E-07
	Cadmium	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.7E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	8.4E+02	mg/kg	8.4E+02	mg/kg	M	4.4E-05	mg/kg-day	N/A	N/A	N/A
	Cyanide	2.5E+00	mg/kg	2.5E+00	mg/kg	M	1.3E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	2.0E+03	mg/kg	2.0E+03	mg/kg	M	1.0E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	1.5E+00	mg/kg	1.5E+00	mg/kg	M	7.8E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	1.8E+00	mg/kg	1.8E+00	mg/kg	M	9.3E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										2.5E-06
Dermal	Dioxin TEQ	2.7E-04	mg/kg	2.7E-04	mg/kg	M	4.6E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.9E-07
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	6.8E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.0E-07
	Cadmium	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.8E-09	mg/kg-day	N/A	N/A	N/A
		(Total)									8.0E-07
Total Risk Across All Exposure Routes/Pathways											3E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1.8E-05

TABLE 8.2.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 2
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.7E-04	mg/kg	2.7E-04	mg/kg	M	1.8E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.7E-07
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	2.6E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.0E-08
	Cadmium	3.2E+00	mg/kg	3.2E+00	mg/kg	M	2.1E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	8.4E+02	mg/kg	8.4E+02	mg/kg	M	5.5E-06	mg/kg-day	N/A	N/A	N/A
	Cyanide	5.3E-01	mg/kg	5.3E-01	mg/kg	M	3.5E-09	mg/kg-day	N/A	N/A	N/A
	Manganese	2.0E+03	mg/kg	2.0E+03	mg/kg	M	1.3E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	4.9E-01	mg/kg	4.9E-01	mg/kg	M	3.2E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	1.8E+00	mg/kg	1.8E+00	mg/kg	M	1.2E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										3.1E-07
Dermal	Dioxin TEQ	2.7E-04	mg/kg	2.7E-04	mg/kg	M	1.2E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.7E-07
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	1.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.6E-08
	Cadmium	3.2E+00	mg/kg	3.2E+00	mg/kg	M	4.5E-10	mg/kg-day	N/A	N/A	N/A
		(Total)									2.0E-07
Total Risk Across All Exposure Routes/Pathways											5E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2.8E-06

TABLE 8.3.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Soils
 Exposure Medium: Surface Soil/Sludge
 Exposure Point: Lagoon 3
 Receptor Population: Trespasser
 Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	1.1E-04	mg/kg	1.1E-04	mg/kg	M	5.8E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.7E-07
	Arsenic	9.4E+00	mg/kg	9.4E+00	mg/kg	M	4.9E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.4E-07
	Chromium	2.5E+02	mg/kg	2.5E+02	mg/kg	M	1.3E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	8.8E+02	mg/kg	8.8E+02	mg/kg	M	4.6E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	4.4E+00	mg/kg	4.4E+00	mg/kg	M	2.3E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										1.6E-06
Dermal	Dioxin TEQ	1.1E-04	mg/kg	1.1E-04	mg/kg	M	1.9E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.8E-07
	Arsenic	9.4E+00	mg/kg	9.4E+00	mg/kg	M	1.6E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.4E-07
	(Total)										5.2E-07
Total Risk Across All Exposure Routes/Pathways											2E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

8E-06

TABLE 8.3.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 3
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.6E-05	mg/kg	2.6E-05	mg/kg	M	1.7E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.6E-08
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	4.1E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.1E-08
	Chromium	1.2E+02	mg/kg	1.2E+02	mg/kg	M	8.2E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	7.0E+02	mg/kg	7.0E+02	mg/kg	M	4.6E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	1.0E+00	mg/kg	1.0E+00	mg/kg	M	6.5E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										8.7E-08
Dermal	Dioxin TEQ	2.6E-05	mg/kg	2.6E-05	mg/kg	M	1.1E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.7E-08
	Arsenic	6.3E+00	mg/kg	6.3E+00	mg/kg	M	2.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.0E-08
	(Total)										5.7E-08
Total Risk Across All Exposure Routes/Pathways											1E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-07

TABLE 8.4.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 4
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	8.4E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	8.2E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	8.2E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	8.2E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	8.2E-09
	Dioxin TEQ	7.7E-04	mg/kg	7.7E-04	mg/kg	M	4.0E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.0E-06
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	2.1E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.1E-07
	Cadmium	1.8E+01	mg/kg	1.8E+01	mg/kg	M	9.2E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	4.6E+03	mg/kg	4.6E+03	mg/kg	M	2.4E-04	mg/kg-day	N/A	N/A	N/A
	Manganese	6.9E+02	mg/kg	6.9E+02	mg/kg	M	3.6E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.0E-07	mg/kg-day	N/A	N/A	N/A
	Thallium	5.8E+00	mg/kg	5.8E+00	mg/kg	M	3.0E-07	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.6E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-08
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.2E-07
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.6E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-08
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.2E-07
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.6E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-08
	Dioxin TEQ	7.7E-04	mg/kg	7.7E-04	mg/kg	M	1.3E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.9E-06
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	6.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.0E-07
	Cadmium	1.8E+01	mg/kg	1.8E+01	mg/kg	M	9.9E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										2.3E-06
Total Risk Across All Exposure Routes/Pathways											9E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

5E-05

TABLE B.4.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 4
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.0E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.0E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.0E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.0E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.0E-09
	Dioxin TEQ	1.8E-04	mg/kg	1.8E-04	mg/kg	M	1.2E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.8E-07
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	2.6E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.9E-08
	Cadmium	1.8E+01	mg/kg	1.8E+01	mg/kg	M	1.1E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	4.6E+03	mg/kg	4.6E+03	mg/kg	M	3.0E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	6.9E+02	mg/kg	6.9E+02	mg/kg	M	4.5E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.3E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	5.8E+00	mg/kg	5.8E+00	mg/kg	M	3.8E-08	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.0E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.9E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.9E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.9E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.9E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.9E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.9E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.9E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.9E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.9E-09
	Dioxin TEQ	1.8E-04	mg/kg	1.8E-04	mg/kg	M	7.7E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.2E-07
	Arsenic	4.0E+00	mg/kg	4.0E+00	mg/kg	M	1.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.5E-08
	Cadmium	1.8E+01	mg/kg	1.8E+01	mg/kg	M	2.5E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										2.1E-07
Total Risk Across All Exposure Routes/Pathways											4E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.5.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 5
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	6.4E-02	mg/kg	6.4E-02	mg/kg	M	3.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.4E-08
	Pentachlorophenol	6.3E+00	mg/kg	6.3E+00	mg/kg	M	3.3E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	3.9E-08
	Dioxin TEQ	2.3E-03	mg/kg	2.3E-03	mg/kg	M	1.2E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.8E-05
	Antimony	1.5E+01	mg/kg	1.5E+01	mg/kg	M	7.6E-07	mg/kg-day	N/A	N/A	N/A
	Arsenic	3.2E+00	mg/kg	3.2E+00	mg/kg	M	1.7E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.5E-07
	Cadmium	3.5E+01	mg/kg	3.5E+01	mg/kg	M	1.8E-06	mg/kg-day	N/A	N/A	N/A
	Chromium	1.6E+04	mg/kg	1.6E+04	mg/kg	M	8.4E-04	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+03	mg/kg	2.6E+03	mg/kg	M	1.4E-04	mg/kg-day	N/A	N/A	N/A
	Thallium	1.7E+01	mg/kg	1.7E+01	mg/kg	M	9.0E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										1.8E-05
Dermal	Benzo(a)pyrene	6.4E-02	mg/kg	6.4E-02	mg/kg	M	4.7E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.4E-08
	Pentachlorophenol	6.3E+00	mg/kg	6.3E+00	mg/kg	M	8.9E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.1E-07
	Dioxin TEQ	2.3E-03	mg/kg	2.3E-03	mg/kg	M	3.9E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.8E-06
	Arsenic	3.2E+00	mg/kg	3.2E+00	mg/kg	M	5.4E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.1E-08
	Cadmium	3.5E+01	mg/kg	3.5E+01	mg/kg	M	2.0E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										6.1E-06
Total Risk Across All Exposure Routes/Pathways											2E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-04

TABLE 8.5.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 5
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	6.4E-02	mg/kg	6.4E-02	mg/kg	M	4.2E-10	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.0E-09
	Pentachlorophenol	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.3E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.5E-09
	Dioxin TEQ	1.1E-03	mg/kg	1.1E-03	mg/kg	M	7.1E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-06
	Antimony	4.2E+00	mg/kg	4.2E+00	mg/kg	M	2.7E-08	mg/kg-day	N/A	N/A	N/A
	Arsenic	1.8E+00	mg/kg	1.8E+00	mg/kg	M	1.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.8E-08
	Cadmium	9.1E+00	mg/kg	9.1E+00	mg/kg	M	5.9E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	4.2E+03	mg/kg	4.2E+03	mg/kg	M	2.7E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	9.4E+02	mg/kg	9.4E+02	mg/kg	M	6.1E-06	mg/kg-day	N/A	N/A	N/A
	Thallium	8.6E+00	mg/kg	8.6E+00	mg/kg	M	5.6E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										1.1E-06
Dermal	Benzo(a)pyrene	6.4E-02	mg/kg	6.4E-02	mg/kg	M	1.2E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	8.6E-09
	Pentachlorophenol	2.0E+00	mg/kg	2.0E+00	mg/kg	M	6.9E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	8.3E-09
	Dioxin TEQ	1.1E-03	mg/kg	1.1E-03	mg/kg	M	4.6E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.0E-07
	Arsenic	1.8E+00	mg/kg	1.8E+00	mg/kg	M	7.6E-09	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.1E-08
	Cadmium	9.1E+00	mg/kg	9.1E+00	mg/kg	M	1.3E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										7.2E-07
Total Risk Across All Exposure Routes/Pathways											2E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-05

TABLE 8.6.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil
Exposure Point: Warehouse Area
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	7.1E-01	mg/kg	7.1E-01	mg/kg	M	3.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.7E-08
	Benzo(a)pyrene	6.5E-01	mg/kg	6.5E-01	mg/kg	M	3.4E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.5E-07
	Benzo(b)fluoranthene	6.7E-01	mg/kg	6.7E-01	mg/kg	M	3.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.6E-08
	Dibenz(a,h)anthracene	7.4E-02	mg/kg	7.4E-02	mg/kg	M	3.9E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.8E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	5.0E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.5E-08
	Arsenic	6.1E+00	mg/kg	6.1E+00	mg/kg	M	3.2E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.7E-07
	Chromium	8.0E+01	mg/kg	8.0E+01	mg/kg	M	4.2E-06	mg/kg-day	N/A	N/A	N/A
	Manganese	1.1E+03	mg/kg	1.1E+03	mg/kg	M	5.5E-05	mg/kg-day	N/A	N/A	N/A
	(Total)										8.8E-07
Dermal	Benzo(a)anthracene	7.1E-01	mg/kg	7.1E-01	mg/kg	M	5.2E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.8E-08
	Benzo(a)pyrene	6.5E-01	mg/kg	6.5E-01	mg/kg	M	4.8E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.5E-07
	Benzo(b)fluoranthene	6.7E-01	mg/kg	6.7E-01	mg/kg	M	4.9E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.6E-08
	Dibenz(a,h)anthracene	7.4E-02	mg/kg	7.4E-02	mg/kg	M	5.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.0E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	1.6E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.4E-08
	Arsenic	6.1E+00	mg/kg	6.1E+00	mg/kg	M	1.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.5E-07
	(Total)										6.4E-07
Total Risk Across All Exposure Routes/Pathways											2E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.6.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil
Exposure Point: Warehouse Area
Receptor Population: Trespasser
Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-09
	Benzo(a)pyrene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	1.5E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.1E-08
	Benzo(b)fluoranthene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	1.7E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-09
	Dibenz(a,h)anthracene	6.7E-02	mg/kg	6.7E-02	mg/kg	M	4.4E-10	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.2E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	6.1E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.2E-09
	Arsenic	6.1E+00	mg/kg	6.1E+00	mg/kg	M	3.9E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.9E-08
	Chromium	8.0E+01	mg/kg	8.0E+01	mg/kg	M	5.2E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	1.1E+03	mg/kg	1.1E+03	mg/kg	M	6.9E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										8.5E-08
Dermal	Benzo(a)anthracene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.3E-09
	Benzo(a)pyrene	2.4E-01	mg/kg	2.4E-01	mg/kg	M	4.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.2E-08
	Benzo(b)fluoranthene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	4.7E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.4E-09
	Dibenz(a,h)anthracene	6.7E-02	mg/kg	6.7E-02	mg/kg	M	1.2E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	9.0E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	4.0E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.9E-09
	Arsenic	6.1E+00	mg/kg	6.1E+00	mg/kg	M	2.6E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.8E-08
	(Total)										9.2E-08
Total Risk Across All Exposure Routes/Pathways											2E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-07

TABLE 8.7.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 1
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Arsenic	2.4E+00	µg/L	2.4E+00	µg/L	M	3.5E-09	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.3E-09
	Manganese	1.0E+03	µg/L	1.0E+03	µg/L	M	1.5E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	3.5E-01	µg/L	3.5E-01	µg/L	M	5.2E-10	mg/kg-day	N/A	N/A	N/A
	Thallium	1.6E+00	µg/L	1.6E+00	µg/L	M	2.4E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										5.3E-09
Total Risk Across All Exposure Routes/Pathways											5E-09

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.7.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 1
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Arsenic	2.4E+00	µg/L	2.4E+00	µg/L	M	5.9E-10	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.8E-10
	Manganese	1.0E+03	µg/L	1.0E+03	µg/L	M	2.6E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	3.5E-01	µg/L	3.5E-01	µg/L	M	8.6E-11	mg/kg-day	N/A	N/A	N/A
	Thallium	1.6E+00	µg/L	1.6E+00	µg/L	M	3.9E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										8.8E-10
Total Risk Across All Exposure Routes/Pathways											9E-10

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.8.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 2
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	5.0E-07	µg/L	5.0E-07	µg/L	M	2.4E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.5E-07
	Manganese (Total)	7.4E+02	µg/L	7.4E+02	µg/L	M	1.1E-06	mg/kg-day	N/A	N/A	N/A 3.5E-07
Total Risk Across All Exposure Routes/Pathways											4E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.8.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 2
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	5.0E-07	µg/L	5.0E-07	µg/L	M	5.6E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.3E-08
	Manganese (Total)	7.4E+02	µg/L	7.4E+02	µg/L	M	1.8E-07	mg/kg-day	N/A	N/A	N/A
Total Risk Across All Exposure Routes/Pathways											8E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

5E-07

TABLE 8.9.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 4
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.3E-08	µg/L	4.3E-08	µg/L	M	2.0E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.0E-08
	Manganese	1.1E+03	µg/L	1.1E+03	µg/L	M	1.7E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	2.0E-01	µg/L	2.0E-01	µg/L	M	2.9E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										3.0E-08
Total Risk Across All Exposure Routes/Pathways											3E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-07

TABLE 8.9.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 4
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.3E-08	µg/L	4.3E-08	µg/L	M	4.8E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.2E-09
	Manganese	4.7E+02	µg/L	4.7E+02	µg/L	M	1.1E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	1.0E-01	µg/L	1.0E-01	µg/L	M	2.5E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										7.2E-09
Total Risk Across All Exposure Routes/Pathways											7E-09

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-08

TABLE 8.10.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 5
 Receptor Population: Trespasser
 Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.2E-07	µg/L	4.2E-07	µg/L	M	2.0E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.0E-07
	Chromium	1.2E+01	µg/L	1.2E+01	µg/L	M	3.6E-08	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+02	µg/L	2.6E+02	µg/L	M	3.8E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	2.1E-01	µg/L	2.1E-01	µg/L	M	3.1E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										3.0E-07
Total Risk Across All Exposure Routes/Pathways											3E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.10.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Current
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoon 5
Receptor Population: Trespasser
Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.2E-07	µg/L	4.2E-07	µg/L	M	4.7E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.0E-08
	Chromium	1.2E+01	µg/L	1.2E+01	µg/L	M	6.0E-09	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+02	µg/L	2.6E+02	µg/L	M	6.3E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	2.1E-01	µg/L	2.1E-01	µg/L	M	5.2E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										7.0E-08
Total Risk Across All Exposure Routes/Pathways											7E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-07

TABLE 8.11.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Hoosic River
 Receptor Population: Recreational Visitor
 Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	1.8E-06	µg/L	1.8E-06	µg/L	M	7.0E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-08
	Manganese	5.3E+02	µg/L	5.3E+02	µg/L	M	2.1E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	2.0E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										1.1E-08
Dermal	Dioxin TEQ	1.8E-06	µg/L	1.8E-06	µg/L	M	1.3E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.0E-06
	Manganese	5.3E+02	µg/L	5.3E+02	µg/L	M	1.9E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	1.8E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										2.0E-06
Total Risk Across All Exposure Routes/Pathways											2E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-05

TABLE 8.11.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Hoosic River
 Receptor Population: Recreational Visitor
 Receptor Age: Adolescent (age 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	4.6E-07	µg/L	4.6E-07	µg/L	M	1.2E-15	mg/kg-day	1.6E+05	(mg/kg-day) ⁻¹	1.8E-10
	Manganese	1.2E+02	µg/L	1.2E+02	µg/L	M	3.2E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	1.3E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										1.8E-10
Dermal	Dioxin TEQ	4.6E-07	µg/L	4.6E-07	µg/L	M	2.0E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.0E-07
	Manganese	1.2E+02	µg/L	1.2E+02	µg/L	M	3.0E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	1.2E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										3.0E-07
Total Risk Across All Exposure Routes/Pathways											3E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.12.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Hoosic River
Receptor Population: Recreational Visitor
Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	1.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-08	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	7.8E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.7E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	1.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.0E-08	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	6.5E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.8E-08	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	7.2E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.3E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	2.4E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	2.1E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	4.1E-09	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.1E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	2.2E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	1.5E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.3E-05	
	Dioxin TEQ	7.3E-05	mg/kg	7.3E-05	mg/kg	M	2.3E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.4E-07	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	1.6E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.5E-07	
	Chromium	2.3E+01	mg/kg	2.3E+01	mg/kg	M	7.1E-07	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.8E+02	mg/kg	5.8E+02	mg/kg	M	1.6E-05	mg/kg-day	N/A	N/A	N/A	
	Mercury	4.9E-01	mg/kg	4.9E-01	mg/kg	M	1.5E-08	mg/kg-day	N/A	N/A	N/A	
	(Total)											2.4E-05
Dermal	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	2.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-08	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	8.0E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	2.0E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.4E-08	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	9.2E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	6.7E-08	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.0E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	7.4E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	3.3E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	3.1E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	8.3E-09	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.7E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	3.3E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	5.0E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.5E-06	
	Dioxin TEQ	7.3E-05	mg/kg	7.3E-05	mg/kg	M	7.4E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-07	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	5.3E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.0E-08	
	(Total)											7.9E-06
	Total Risk Across All Exposure Routes/Pathways											3E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-04

TABLE 8.12.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Current
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Hoosic River
Receptor Population: Recreational Visitor
Receptor Age: Adolescent (ages 9-18)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	2.7E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.0E-09	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	9.5E-09	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	2.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-09	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	1.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	7.9E-09	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.2E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	8.8E-10	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	3.9E-09	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	3.4E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	5.9E-10	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.8E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	3.7E-10	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	2.6E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.9E-06	
	Dioxin TEQ	8.9E-06	mg/kg	8.9E-06	mg/kg	M	4.8E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.9E-09	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	2.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.1E-08	
	Chromium	2.3E+01	mg/kg	2.3E+01	mg/kg	M	1.2E-07	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.8E+02	mg/kg	5.8E+02	mg/kg	M	3.0E-05	mg/kg-day	N/A	N/A	N/A	
	Mercury	4.6E-01	mg/kg	4.6E-01	mg/kg	M	2.6E-09	mg/kg-day	N/A	N/A	N/A	
	(Total)											3.9E-06
Dermal	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	7.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.6E-09	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	3.7E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.7E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	6.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.8E-09	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	3.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.2E-08	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.5E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	1.1E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	1.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	2.1E-09	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	5.5E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.1E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	1.7E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.5E-06	
	Dioxin TEQ	8.9E-06	mg/kg	8.9E-06	mg/kg	M	3.0E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.5E-09	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	1.8E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.7E-08	
	(Total)											2.6E-06
	Total Risk Across All Exposure Routes/Pathways											7E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-05

TABLE 6.13.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POYNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 1
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (%)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	1,2-Dichlorobenzene	4.0E+00	mg/kg	4.0E+00	mg/kg	M	5.9E-07	mg/kg-day	N/A	N/A	N/A
	1,2-Dichloroethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.3E-08	mg/kg-day	9.1E-02	(mg/kg-day) ⁻¹	3.9E-09
	1,3-Dichlorobenzene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.9E-08	mg/kg-day	N/A	N/A	N/A
	1,4-Dichlorobenzene	3.4E-01	mg/kg	3.4E-01	mg/kg	M	5.1E-08	mg/kg-day	2.4E-02	(mg/kg-day) ⁻¹	1.2E-09
	Benzene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	3.2E-08	mg/kg-day	5.5E-02	(mg/kg-day) ⁻¹	1.7E-09
	Bromodichloromethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.3E-08	mg/kg-day	8.2E-02	(mg/kg-day) ⁻¹	2.7E-09
	Carbon tetrachloride	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.3E-08	mg/kg-day	1.3E-01	(mg/kg-day) ⁻¹	5.9E-09
	Chlorobenzene	3.3E-01	mg/kg	3.3E-01	mg/kg	M	5.0E-08	mg/kg-day	N/A	N/A	N/A
	Chloroform	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.3E-08	mg/kg-day	6.1E-03	(mg/kg-day) ⁻¹	2.6E-10
	Tetrachloroethylene	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.3E-08	mg/kg-day	5.2E-02	(mg/kg-day) ⁻¹	2.2E-09
	Trichloroethene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.9E-08	mg/kg-day	1.1E-02	(mg/kg-day) ⁻¹	3.1E-10
	Xylene (total)	2.4E+01	mg/kg	2.4E+01	mg/kg	M	3.6E-06	mg/kg-day	N/A	N/A	N/A
	2-Methylnaphthalene	7.3E+00	mg/kg	7.3E+00	mg/kg	M	1.1E-06	mg/kg-day	N/A	N/A	N/A
	4-Methylphenol	6.5E+00	mg/kg	6.5E+00	mg/kg	M	9.8E-07	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	3.0E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.2E-07
	Benzo(a)pyrene	7.0E+00	mg/kg	7.0E+00	mg/kg	M	3.0E-07	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.2E-06
	Naphthalene	2.3E+01	mg/kg	2.3E+01	mg/kg	M	3.5E-06	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	3.0E+01	mg/kg	3.0E+01	mg/kg	M	4.5E-06	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	5.4E-07
	Dieldrin	5.9E-03	mg/kg	5.9E-03	mg/kg	M	8.9E-10	mg/kg-day	1.9E+01	(mg/kg-day) ⁻¹	1.4E-08
	Dioxin TEQ	1.2E-02	mg/kg	1.2E-02	mg/kg	M	1.7E-09	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.6E-04
	Antimony	3.4E+00	mg/kg	3.4E+00	mg/kg	M	5.1E-07	mg/kg-day	N/A	N/A	N/A
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	1.3E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.9E-06
	Barium	4.1E+02	mg/kg	4.1E+02	mg/kg	M	6.2E-05	mg/kg-day	N/A	N/A	N/A
	Cadmium	2.2E+01	mg/kg	2.2E+01	mg/kg	M	3.3E-06	mg/kg-day	N/A	N/A	N/A
	Chromium	3.1E+04	mg/kg	3.1E+04	mg/kg	M	4.7E-03	mg/kg-day	N/A	N/A	N/A
	Cyanide	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.7E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	7.7E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	8.5E+01	mg/kg	8.5E+01	mg/kg	M	1.3E-05	mg/kg-day	N/A	N/A	N/A
Thallium	8.4E+00	mg/kg	8.4E+00	mg/kg	M	1.4E-06	mg/kg-day	N/A	N/A	N/A	
(Total)											2.7E-04
Dermal	Benzo(a)anthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.6E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.1E-07
	Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.1E-06
	Naphthalene	2.3E+01	mg/kg	2.3E+01	mg/kg	M	1.8E-06	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	3.0E+01	mg/kg	3.0E+01	mg/kg	M	4.5E-06	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	5.4E-07
	Dioxin TEQ	1.2E-02	mg/kg	1.2E-02	mg/kg	M	2.1E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.1E-05
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	1.5E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.3E-07
	Cadmium	2.2E+01	mg/kg	2.2E+01	mg/kg	M	1.3E-06	mg/kg-day	N/A	N/A	N/A
(Total)											3.3E-05
Total Risk Across All Exposure Routes/Pathways											3E-04

(1) Medium-Specific (M) EPC selected for hazard calculation

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the cancer slope factor be revised as proposed, the risk for this receptor would increase to

2E-03

TABLE B-13 CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 1
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	1,2-Dichlorobenzene	4.0E+00	mg/kg	4.0E+00	mg/kg	M	4.3E-08	mg/kg-day	N/A	N/A	N/A	
	1,2-Dichloroethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.1E-09	mg/kg-day	9.1E-02	(mg/kg-day) ⁻¹	2.8E-10	
	1,3-Dichlorobenzene	1.8E-01	mg/kg	1.9E-01	mg/kg	M	2.1E-09	mg/kg-day	N/A	N/A	N/A	
	1,4-Dichlorobenzene	3.4E-01	mg/kg	3.4E-01	mg/kg	M	3.7E-09	mg/kg-day	2.4E-02	(mg/kg-day) ⁻¹	8.9E-11	
	Benzene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	2.3E-09	mg/kg-day	5.5E-02	(mg/kg-day) ⁻¹	1.3E-10	
	Bromodichloromethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.1E-09	mg/kg-day	6.2E-02	(mg/kg-day) ⁻¹	1.9E-10	
	Carbon tetrachloride	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.1E-09	mg/kg-day	1.3E-01	(mg/kg-day) ⁻¹	4.1E-10	
	Chlorobenzene	3.3E-01	mg/kg	3.3E-01	mg/kg	M	3.6E-09	mg/kg-day	N/A	N/A	N/A	
	Chloroform	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.1E-09	mg/kg-day	8.1E-03	(mg/kg-day) ⁻¹	1.9E-11	
	Tetrachloroethylene	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.1E-09	mg/kg-day	5.2E-02	(mg/kg-day) ⁻¹	1.6E-10	
	Trichloroethene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.1E-09	mg/kg-day	1.1E-02	(mg/kg-day) ⁻¹	2.3E-11	
	Xylenes (total)	2.4E+01	mg/kg	2.4E+01	mg/kg	M	2.6E-07	mg/kg-day	N/A	N/A	N/A	
	2-Methylnaphthalene	7.3E+00	mg/kg	7.3E+00	mg/kg	M	8.0E-08	mg/kg-day	N/A	N/A	N/A	
	4-Methylphenol	9.5E+00	mg/kg	9.5E+00	mg/kg	M	7.1E-08	mg/kg-day	N/A	N/A	N/A	
	Benzo(a)anthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.2E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.6E-08	
	Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.2E-08	mg/kg-day	7.3E-00	(mg/kg-day) ⁻¹	1.6E-07	
	Naphthalene	2.3E+01	mg/kg	2.3E+01	mg/kg	M	2.5E-07	mg/kg-day	N/A	N/A	N/A	
	Pentachlorophenol	3.0E+01	mg/kg	3.0E+01	mg/kg	M	3.3E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	3.9E-08	
	Dieldrin	5.9E-03	mg/kg	5.9E-03	mg/kg	N	5.5E-11	mg/kg-day	1.6E+01	(mg/kg-day) ⁻¹	1.0E-08	
	Dioxin TEQ	1.8E-03	mg/kg	1.8E-03	mg/kg	M	2.0E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.0E-06	
	Antimony	3.4E+00	mg/kg	3.4E+00	mg/kg	M	3.7E-08	mg/kg-day	N/A	N/A	N/A	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	9.2E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.4E-07	
	Barium	4.1E+02	mg/kg	4.1E+02	mg/kg	M	4.5E-06	mg/kg-day	N/A	N/A	N/A	
	Cadmium	2.2E+01	mg/kg	2.2E+01	mg/kg	M	2.4E-07	mg/kg-day	N/A	N/A	N/A	
	Chromium	3.1E+04	mg/kg	3.1E+04	mg/kg	M	3.4E-04	mg/kg-day	N/A	N/A	N/A	
	Cyanide	1.1E+00	mg/kg	1.1E+00	mg/kg	M	1.2E-06	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	5.5E-06	mg/kg-day	N/A	N/A	N/A	
	Mercury	9.5E+00	mg/kg	9.5E+00	mg/kg	M	1.0E-07	mg/kg-day	N/A	N/A	N/A	
	Thallium	9.4E+00	mg/kg	9.4E+00	mg/kg	M	1.0E-07	mg/kg-day	N/A	N/A	N/A	
	(Total)											3.3E-06
	Dermal	Benzo(a)anthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-08
		Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	2.3E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.7E-07
		Naphthalene	2.3E+01	mg/kg	2.3E+01	mg/kg	M	2.6E-07	mg/kg-day	N/A	N/A	N/A
Pentachlorophenol		3.0E+01	mg/kg	3.0E+01	mg/kg	M	6.6E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	7.9E-08	
Dioxin TEQ		1.8E-03	mg/kg	1.8E-03	mg/kg	M	4.8E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.1E-07	
Arsenic		8.4E+00	mg/kg	8.4E+00	mg/kg	M	2.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.3E-08	
Cadmium		2.2E+01	mg/kg	2.2E+01	mg/kg	M	1.9E-09	mg/kg-day	N/A	N/A	N/A	
(Total)											1.0E-06	
Total Risk Across All Exposure Routes/Pathways											4E-06	

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-05

TABLE 8.14.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 2
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	7.7E-02	mg/kg	7.7E-02	mg/kg	M	1.2E-08	mg/kg-day	N/A	N/A	N/A
	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	2.3E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.5E-06
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	6.6E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	9.9E-07
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	3.3E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	5.6E+02	mg/kg	5.6E+02	mg/kg	M	8.4E-05	mg/kg-day	N/A	N/A	N/A
	Cyanide	1.8E+00	mg/kg	1.8E+00	mg/kg	M	2.7E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	2.6E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	3.8E-01	mg/kg	3.8E-01	mg/kg	M	5.7E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	1.8E+00	mg/kg	1.8E+00	mg/kg	M	2.7E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										4.5E-06
Dermal	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	2.8E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.2E-07
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	7.9E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.2E-07
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	1.3E-09	mg/kg-day	N/A	N/A	N/A
		(Total)									5.4E-07
Total Risk Across All Exposure Routes/Pathways											5E-08

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-05

TABLE 8.14.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 2
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	7.7E-02	mg/kg	7.7E-02	mg/kg	M	8.4E-10	mg/kg-day	N/A	N/A	N/A
	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	1.7E-12	mg/kg-day	1.6E+06	(mg/kg-day) ⁻¹	2.6E-07
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	4.8E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.2E-08
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	2.4E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	5.6E+02	mg/kg	5.6E+02	mg/kg	M	6.1E-06	mg/kg-day	N/A	N/A	N/A
	Cyanide	1.8E+00	mg/kg	1.8E+00	mg/kg	M	2.0E-08	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	1.8E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	3.8E-01	mg/kg	3.8E-01	mg/kg	M	4.2E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	1.8E+00	mg/kg	1.8E+00	mg/kg	M	2.0E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										3.3E-07
Dermal	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	4.1E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.1E-08
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	1.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.7E-08
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	1.9E-10	mg/kg-day	N/A	N/A	N/A
		(Total)									7.9E-08
Total Risk Across All Exposure Routes/Pathways											4E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.15.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Soils
 Exposure Medium: Soil/Sludge
 Exposure Point: Lagoon 3
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.6E-03	mg/kg	2.6E-03	mg/kg	M	3.8E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.8E-05
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	4.5E-07	mg/kg-day	N/A	N/A	N/A
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	1.2E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.9E-06
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	6.4E-06	mg/kg-day	N/A	N/A	N/A
	Chromium	1.8E+04	mg/kg	1.8E+04	mg/kg	M	2.7E-03	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	2.6E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.6E-06	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E-01	mg/kg	6.0E-01	mg/kg	M	9.0E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										5.9E-05
Dermal	Dioxin TEQ	2.6E-03	mg/kg	2.6E-03	mg/kg	M	4.6E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.9E-06
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	1.5E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.2E-07
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	2.5E-08	mg/kg-day	N/A	N/A	N/A
		(Total)									7.1E-06
Total Risk Across All Exposure Routes/Pathways											7E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-04

TABLE 8.15.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 3
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.4E-04	mg/kg	2.4E-04	mg/kg	M	2.6E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.9E-07
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	3.3E-08	mg/kg-day	N/A	N/A	N/A
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	9.0E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.4E-07
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	4.6E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	4.9E+03	mg/kg	4.9E+03	mg/kg	M	5.4E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	1.9E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E+01	mg/kg	1.1E+01	mg/kg	M	1.2E-07	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E-01	mg/kg	6.0E-01	mg/kg	M	6.6E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										
Dermal	Dioxin TEQ	2.4E-04	mg/kg	2.4E-04	mg/kg	M	6.3E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.4E-08
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	2.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.2E-08
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	3.7E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										1.3E-07
Total Risk Across All Exposure Routes/Pathways											7E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-06

TABLE 8.16.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 4
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.2E-06	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.4E-08
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.2E-06	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.4E-07
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.2E-06	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.4E-08
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.2E-06	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.4E-07
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.2E-06	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.4E-08
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.2E-06	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	6.3E-06	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	9.9E-09
	Dioxin TEQ	7.7E-04	mg/kg	7.7E-04	mg/kg	M	1.2E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.7E-05
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	6.9E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.0E-06
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.5E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	7.6E+01	mg/kg	7.6E+01	mg/kg	M	1.1E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	7.7E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.3E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	2.1E+00	mg/kg	2.1E+00	mg/kg	M	3.2E-07	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-06	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-06
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-06	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.2E-07
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-06	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-06
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-06	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.2E-07
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-06	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-06
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-06	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	6.2E-06	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	9.9E-09
	Dioxin TEQ	7.7E-04	mg/kg	7.7E-04	mg/kg	M	1.4E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.1E-06
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	6.3E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.2E-07
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.4E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										2.5E-06
Total Risk Across All Exposure Routes/Pathways											2E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-04

TABLE B.16.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 4
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.7E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.7E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-09
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	6.0E-09	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	7.2E-10
	Dioxin TEQ	1.4E-04	mg/kg	1.4E-04	mg/kg	M	1.5E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.3E-07
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	5.0E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.6E-08
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.5E-09	mg/kg-day	N/A	N/A	N/A
	Chromium	7.6E+01	mg/kg	7.6E+01	mg/kg	M	8.3E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	5.8E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	2.1E+00	mg/kg	2.1E+00	mg/kg	M	2.3E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										3.4E-07
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.8E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.8E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.8E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.8E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.8E-09
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	1.2E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.4E-09
	Dioxin TEQ	1.4E-04	mg/kg	1.4E-04	mg/kg	M	3.6E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.4E-08
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.8E-08
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.0E-11	mg/kg-day	N/A	N/A	N/A
		(Total)									1.1E-07
Total Risk Across All Exposure Routes/Pathways											5E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-06

TABLE 8.17.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 5
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	3.1E-01	mg/kg	3.1E+01	mg/kg	M	4.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.4E-07
	bis(2-Chloroethoxy)metha	6.2E-01	mg/kg	6.2E-01	mg/kg	M	9.3E-08	mg/kg-day	N/A	N/A	N/A
	Bis(2-chloroethyl)ether	3.2E-01	mg/kg	3.2E+01	mg/kg	M	4.6E-08	mg/kg-day	1.1E+00	(mg/kg-day) ⁻¹	5.3E-08
	N-Nitroso-di-n-propylamin	4.9E-01	mg/kg	4.9E-01	mg/kg	M	7.4E-08	mg/kg-day	7.0E+00	(mg/kg-day) ⁻¹	5.2E-07
	Nitrobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.5E-08	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	9.2E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.1E-08
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	9.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.8E-08
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	2.9E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.3E-05
	Antimony	8.0E+00	mg/kg	8.0E+00	mg/kg	M	1.2E-08	mg/kg-day	N/A	N/A	N/A
	Arsenic	5.0E+00	mg/kg	5.0E+00	mg/kg	M	7.5E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.1E-08
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.5E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	8.1E+03	mg/kg	8.1E+03	mg/kg	M	1.2E-03	mg/kg-day	N/A	N/A	N/A
	Manganese	1.1E+03	mg/kg	1.1E+03	mg/kg	M	1.7E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	4.7E+00	mg/kg	4.7E+00	mg/kg	M	7.1E-07	mg/kg-day	N/A	N/A	N/A
	Thallium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	2.0E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										4.5E-05
Dermal	Benzo(a)pyrene	3.1E-01	mg/kg	3.1E-01	mg/kg	M	2.4E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.8E-07
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	9.1E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.1E-08
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	5.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.0E-08
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	3.5E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.2E-06
	Arsenic	5.0E+00	mg/kg	5.0E+00	mg/kg	M	9.0E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.3E-07
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	5.1E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										5.5E-06
Total Risk Across All Exposure Routes/Pathways											5E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-04

TABLE 8.17.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 5
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.7E-08
	bis(2-Chloroethoxy)methane	6.2E-01	mg/kg	6.2E-01	mg/kg	M	8.8E-09	mg/kg-day	N/A	N/A	N/A
	Bis(2-chloroethyl)ether	2.8E-01	mg/kg	2.8E-01	mg/kg	M	3.0E-09	mg/kg-day	1.1E+00	(mg/kg-day) ⁻¹	3.3E-09
	N-Nitroso-di-n-propylamine	2.9E-01	mg/kg	2.9E-01	mg/kg	M	3.2E-09	mg/kg-day	7.0E+00	(mg/kg-day) ⁻¹	2.2E-08
	Nitrobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.5E-09	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	6.7E-09	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	8.0E-10
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	6.6E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.3E-09
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	2.1E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.2E-06
	Antimony	8.0E+00	mg/kg	8.0E+00	mg/kg	M	8.8E-08	mg/kg-day	N/A	N/A	N/A
	Arsenic	2.3E+00	mg/kg	2.3E+00	mg/kg	M	2.5E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.7E-08
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.1E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	8.1E+03	mg/kg	8.1E+03	mg/kg	M	8.9E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	1.1E+03	mg/kg	1.1E+03	mg/kg	M	1.2E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	1.5E+00	mg/kg	1.5E+00	mg/kg	M	1.7E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	1.4E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										3.2E-08
Dermal	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.5E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.8E-08
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	1.3E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.6E-09
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	7.3E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.5E-09
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	5.0E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.6E-07
	Arsenic	2.3E+00	mg/kg	2.3E+00	mg/kg	M	5.9E-09	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.9E-09
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	8.8E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										7.9E-07
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

2E-05

TABLE 8.18.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	9.8E-02	mg/kg	9.8E-02	mg/kg	M	1.5E-08	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	3.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.4E-08
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	3.9E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.9E-07
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	8.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	6.4E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	2.6E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.9E-07
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.9E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.1E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	1.4E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.2E-07
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	1.1E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.6E-06
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	4.8E-06	mg/kg-day	N/A	N/A	N/A
	Manganese	6.8E+02	mg/kg	6.8E+02	mg/kg	M	1.0E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E-01	mg/kg	1.1E-01	mg/kg	M	1.7E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E+00	mg/kg	6.0E+00	mg/kg	M	9.0E-07	mg/kg-day	N/A	N/A	N/A
	Vanadium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	1.9E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.3E-08
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	2.0E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.5E-07
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	4.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.3E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	1.4E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.0E-07
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	1.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.1E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	1.7E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.6E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	1.3E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.9E-07
(Total)											5.2E-07
Total Risk Across All Exposure Routes/Pathways											3E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-06

TABLE 8.18.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	9.8E-02	mg/kg	9.8E-02	mg/kg	M	1.1E-09	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.8E-09
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	2.8E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.1E-08
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.6E-09
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	1.9E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.4E-08
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.1E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.5E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	1.0E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.5E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	7.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.1E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	3.5E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	6.8E+02	mg/kg	6.8E+02	mg/kg	M	7.5E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E-01	mg/kg	1.1E-01	mg/kg	M	1.2E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E+00	mg/kg	6.0E+00	mg/kg	M	6.6E-08	mg/kg-day	N/A	N/A	N/A
	Vanadium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	1.4E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										1.7E-07
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.5E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.8E-09
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	3.0E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.2E-08
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	6.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.8E-09
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	2.0E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.5E-08
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.2E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.6E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	2.5E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.7E-09
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	1.8E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.8E-08
	(Total)										7.6E-08
Total Risk Across All Exposure Routes/Pathways											2E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-07

TABLE 8.19.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 1
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Arsenic	2.4E+00	µg/L	2.4E+00	µg/L	M	1.1E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.7E-08
	Manganese	1.0E+03	µg/L	1.0E+03	µg/L	M	4.8E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	3.5E-01	µg/L	3.5E-01	µg/L	M	1.6E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	1.6E+00	µg/L	1.6E+00	µg/L	M	7.3E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										1.7E-08
Total Risk Across All Exposure Routes/Pathways											2E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.19.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 1
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Arsenic	2.4E+00	µg/L	2.4E+00	µg/L	M	8.0E-10	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.2E-09
	Manganese	1.0E+03	µg/L	1.0E+03	µg/L	M	3.5E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	3.5E-01	µg/L	3.5E-01	µg/L	M	1.2E-10	mg/kg-day	N/A	N/A	N/A
	Thallium	1.6E+00	µg/L	1.6E+00	µg/L	M	5.4E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										1.2E-09
Total Risk Across All Exposure Routes/Pathways											1E-09

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.20.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 2
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	5.0E-07	µg/L	5.0E-07	µg/L	M	7.4E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-06
	Manganese (Total)	7.4E+02	µg/L	7.4E+02	µg/L	M	3.4E-06	mg/kg-day	N/A	N/A	N/A 1.1E-06
Total Risk Across All Exposure Routes/Pathways											1E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

7E-06

TABLE 8.20.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 2
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	5.0E-07	µg/L	5.0E-07	µg/L	M	7.6E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-07
	Manganese (Total)	7.4E+02	µg/L	7.4E+02	µg/L	M	2.5E-07	mg/kg-day	N/A	N/A	N/A 1.1E-07
Total Risk Across All Exposure Routes/Pathways											1E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

7E-07

TABLE 8.21.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 4
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.3E-08	µg/L	4.3E-08	µg/L	M	6.3E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.5E-08
	Manganese	1.1E+03	µg/L	1.1E+03	µg/L	M	5.2E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	2.0E-01	µg/L	2.0E-01	µg/L	M	9.2E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										9.5E-08
Total Risk Across All Exposure Routes/Pathways											9E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-07

TABLE 8.21.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 4
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.3E-08	µg/L	4.3E-08	µg/L	M	6.5E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.8E-09
	Manganese	4.7E+02	µg/L	4.7E+02	µg/L	M	1.6E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	1.0E-01	µg/L	1.0E-01	µg/L	M	3.3E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										9.8E-09
Total Risk Across All Exposure Routes/Pathways											1E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-08

TABLE 8.22.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 5
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.2E-07	µg/L	4.2E-07	µg/L	M	6.2E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.3E-07
	Chromium	1.2E+01	µg/L	1.2E+01	µg/L	M	1.1E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+02	µg/L	2.6E+02	µg/L	M	1.2E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	2.1E-01	µg/L	2.1E-01	µg/L	M	9.6E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										9.3E-07
Total Risk Across All Exposure Routes/Pathways											9E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-06

TABLE 8.22.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 5
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.2E-07	µg/L	4.2E-07	µg/L	M	6.4E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.6E-08
	Chromium	1.2E+01	µg/L	1.2E+01	µg/L	M	8.2E-09	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+02	µg/L	2.6E+02	µg/L	M	8.6E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	2.1E-01	µg/L	2.1E-01	µg/L	M	7.0E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										9.6E-08
Total Risk Across All Exposure Routes/Pathways											1E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-07

TABLE 8.23.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Hoosic River
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	1.8E-06	µg/L	1.8E-06	µg/L	M	1.8E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.7E-08
	Manganese	5.3E+02	µg/L	5.3E+02	µg/L	M	5.3E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	5.0E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										2.7E-08
Dermal	Dioxin TEQ	1.8E-06	µg/L	1.8E-06	µg/L	M	4.2E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.3E-06
	Manganese	5.3E+02	µg/L	5.3E+02	µg/L	M	6.1E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	5.7E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										6.3E-06
Total Risk Across All Exposure Routes/Pathways											6E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-05

TABLE 8.23.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Hoosic River
 Receptor Population: Park Visitor
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	4.6E-07	µg/L	4.6E-07	µg/L	M	1.4E-15	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.0E-10
	Manganese	1.2E+02	µg/L	1.2E+02	µg/L	M	3.6E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	1.5E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										2.0E-10
Dermal	Dioxin TEQ	4.6E-07	µg/L	4.6E-07	µg/L	M	2.7E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.1E-07
	Manganese	1.2E+02	µg/L	1.2E+02	µg/L	M	4.1E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	1.7E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										4.1E-07
Total Risk Across All Exposure Routes/Pathways											4E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-06

TABLE 8.24.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Hoosic River
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	4.2E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.1E-08	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	2.0E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.5E-07	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	3.6E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.6E-08	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	1.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.2E-07	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.4E-08	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	6.0E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	5.3E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.1E-08	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	2.8E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	5.6E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	4.0E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.0E-05	
	Dioxin TEQ	7.3E-05	mg/kg	7.3E-05	mg/kg	M	5.9E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.8E-07	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	4.2E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.4E-07	
	Chromium	2.3E+01	mg/kg	2.3E+01	mg/kg	M	1.8E-06	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.8E+02	mg/kg	5.8E+02	mg/kg	M	4.7E-05	mg/kg-day	N/A	N/A	N/A	
	Mercury	4.9E-01	mg/kg	4.9E-01	mg/kg	M	3.9E-08	mg/kg-day	N/A	N/A	N/A	
		(Total)										6.2E-05
Dermal	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	2.2E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.6E-08	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.0E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	7.6E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	1.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.4E-08	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	8.7E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	8.3E-08	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	9.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	7.0E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	3.1E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	3.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	5.9E-09	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	1.6E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	3.1E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	4.8E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.2E-08	
	Dioxin TEQ	7.3E-05	mg/kg	7.3E-05	mg/kg	M	7.0E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-07	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	5.1E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.6E-08	
		(Total)										7.5E-06
	Total Risk Across All Exposure Routes/Pathways											7E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to 4E-04

TABLE 8.24.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Hoosic River
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	3.1E-09	mg/kg-day	7.3E-01	{mg/kg-day} ⁻¹	2.2E-09	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.5E-09	mg/kg-day	7.3E+00	{mg/kg-day} ⁻¹	1.1E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	2.6E-09	mg/kg-day	7.3E-01	{mg/kg-day} ⁻¹	1.9E-09	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	1.2E-09	mg/kg-day	7.3E+00	{mg/kg-day} ⁻¹	8.9E-09	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E-01	{mg/kg-day} ⁻¹	9.9E-10	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	4.4E-09	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	3.9E-10	mg/kg-day	2.0E+00	{mg/kg-day} ⁻¹	7.7E-10	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	2.1E-10	mg/kg-day	2.0E+00	{mg/kg-day} ⁻¹	4.1E-10	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	2.9E-11	mg/kg-day	1.5E+05	{mg/kg-day} ⁻¹	4.4E-06	
	Dioxin TEQ	8.9E-06	mg/kg	8.9E-06	mg/kg	M	5.2E-14	mg/kg-day	1.5E+05	{mg/kg-day} ⁻¹	7.8E-09	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	3.1E-08	mg/kg-day	1.5E+00	{mg/kg-day} ⁻¹	4.6E-08	
	Chromium	2.3E+01	mg/kg	2.3E+01	mg/kg	M	1.3E-07	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.8E+02	mg/kg	5.8E+02	mg/kg	M	3.4E-06	mg/kg-day	N/A	N/A	N/A	
	Mercury	4.9E-01	mg/kg	4.9E-01	mg/kg	M	2.9E-09	mg/kg-day	N/A	N/A	N/A	
		(Total)										4.4E-06
Dermal	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	3.2E-09	mg/kg-day	7.3E-01	{mg/kg-day} ⁻¹	2.3E-09	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	1.5E-09	mg/kg-day	7.3E+00	{mg/kg-day} ⁻¹	1.1E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	2.7E-09	mg/kg-day	7.3E-01	{mg/kg-day} ⁻¹	2.0E-09	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	1.3E-09	mg/kg-day	7.3E+00	{mg/kg-day} ⁻¹	9.3E-09	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	1.4E-09	mg/kg-day	7.3E-01	{mg/kg-day} ⁻¹	1.0E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	4.6E-09	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	4.3E-10	mg/kg-day	2.0E+00	{mg/kg-day} ⁻¹	8.7E-10	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	2.3E-10	mg/kg-day	2.0E+00	{mg/kg-day} ⁻¹	4.6E-10	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	7.0E-12	mg/kg-day	1.5E+05	{mg/kg-day} ⁻¹	1.0E-06	
	Dioxin TEQ	8.9E-06	mg/kg	8.9E-06	mg/kg	M	1.2E-14	mg/kg-day	1.5E+05	{mg/kg-day} ⁻¹	1.9E-09	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	7.4E-09	mg/kg-day	1.5E+00	{mg/kg-day} ⁻¹	1.1E-08	
		(Total)										1.1E-08
	Total Risk Across All Exposure Routes/Pathways											8E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-05

TABLE B.25 RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 1
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	1,2-Dichlorobenzene	4.0E+00	mg/kg	4.0E+00	mg/kg	M	1.4E-06	mg/kg-day	N/A	N/A	N/A	
	1,2-Dichloroethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.0E-07	mg/kg-day	9.1E-02	(mg/kg-day) ⁻¹	9.1E-09	
	1,3-Dichlorobenzene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	6.7E-08	mg/kg-day	N/A	N/A	N/A	
	1,4-Dichlorobenzene	3.4E-01	mg/kg	3.4E-01	mg/kg	M	1.2E-07	mg/kg-day	2.4E-02	(mg/kg-day) ⁻¹	2.9E-09	
	Benzene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	7.4E-08	mg/kg-day	5.5E-02	(mg/kg-day) ⁻¹	4.1E-09	
	Bromodichloromethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.0E-07	mg/kg-day	6.2E-02	(mg/kg-day) ⁻¹	8.2E-09	
	Carbon tetrachloride	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.0E-07	mg/kg-day	1.3E-01	(mg/kg-day) ⁻¹	1.3E-08	
	Chlorobenzene	3.3E-01	mg/kg	3.3E-01	mg/kg	M	1.2E-07	mg/kg-day	N/A	N/A	N/A	
	Chloroform	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.0E-07	mg/kg-day	6.1E-03	(mg/kg-day) ⁻¹	6.1E-10	
	Tetrachloroethylene	2.9E-01	mg/kg	2.9E-01	mg/kg	M	1.0E-07	mg/kg-day	5.2E-02	(mg/kg-day) ⁻¹	5.2E-09	
	Trichloroethene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	6.7E-08	mg/kg-day	1.1E-02	(mg/kg-day) ⁻¹	7.3E-10	
	Xylene (total)	2.4E+01	mg/kg	2.4E+01	mg/kg	M	8.4E-06	mg/kg-day	N/A	N/A	N/A	
	2-Methylnaphthalene	7.3E+00	mg/kg	7.3E+00	mg/kg	M	2.8E-08	mg/kg-day	N/A	N/A	N/A	
	4-Methylnaphthalene	6.5E+00	mg/kg	6.5E+00	mg/kg	M	2.3E-08	mg/kg-day	N/A	N/A	N/A	
	Benzo(a)anthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	7.0E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.1E-07	
	Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	7.0E-07	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.1E-06	
	Naphthalene	2.3E+01	mg/kg	2.3E+01	mg/kg	M	8.1E-08	mg/kg-day	N/A	N/A	N/A	
	Pentachlorophenol	3.0E+01	mg/kg	3.0E+01	mg/kg	M	1.1E-05	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.3E-06	
	Diiodin	5.9E-03	mg/kg	5.9E-03	mg/kg	M	2.1E-09	mg/kg-day	1.0E+01	(mg/kg-day) ⁻¹	3.3E-08	
	Diisn TEQ	1.2E-02	mg/kg	1.2E-02	mg/kg	M	4.1E-09	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.1E-04	
	Antimony	3.4E+00	mg/kg	3.4E+00	mg/kg	M	1.2E-08	mg/kg-day	N/A	N/A	N/A	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	2.9E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.4E-06	
	Barium	4.1E+02	mg/kg	4.1E+02	mg/kg	M	1.4E-04	mg/kg-day	N/A	N/A	N/A	
	Cadmium	2.2E+01	mg/kg	2.2E+01	mg/kg	M	7.6E-05	mg/kg-day	N/A	N/A	N/A	
	Chromium	3.1E+04	mg/kg	3.1E+04	mg/kg	M	1.1E-02	mg/kg-day	N/A	N/A	N/A	
	Cyanide	1.1E+00	mg/kg	1.1E+00	mg/kg	M	4.0E-07	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.8E-04	mg/kg-day	N/A	N/A	N/A	
	Mercury	8.5E+01	mg/kg	8.5E+01	mg/kg	M	3.0E-05	mg/kg-day	N/A	N/A	N/A	
	Thallium	8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.3E-06	mg/kg-day	N/A	N/A	N/A	
	(Total)											6.2E-04
	Dermal	Benzo(a)anthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	4.0E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.9E-07
		Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	4.0E-07	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.9E-06
Naphthalene		2.3E+01	mg/kg	2.3E+01	mg/kg	M	4.8E-06	mg/kg-day	N/A	N/A	N/A	
Pentachlorophenol		3.0E+01	mg/kg	3.0E+01	mg/kg	M	1.1E-05	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.4E-06	
Diisn TEQ		1.2E-02	mg/kg	1.2E-02	mg/kg	M	5.3E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.8E-05	
Arsenic		8.4E+00	mg/kg	8.4E+00	mg/kg	M	3.8E-07	mg/kg-day	1.6E+00	(mg/kg-day) ⁻¹	5.8E-07	
Cadmium		2.2E+01	mg/kg	2.2E+01	mg/kg	M	3.3E-06	mg/kg-day	N/A	N/A	N/A	
(Total)												8.5E-06
Total Risk Across All Exposure Routes/Pathways											7E-04	

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the derm slope factor be revised as proposed, the risk for the receptor would increase to

4E-03

TABLE B.25.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWWAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 1
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	1,2-Dichlorobenzene	4.0E+00	mg/kg	4.0E+00	mg/kg	M	1.2E-07	mg/kg-day	N/A	N/A	N/A	
	1,2-Dichloroethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	8.3E-03	mg/kg-day	9.1E-02	(mg/kg-day) ⁻¹	7.6E-10	
	1,3-Dichlorobenzene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	5.6E-09	mg/kg-day	N/A	N/A	N/A	
	1,4-Dichlorobenzene	3.4E-01	mg/kg	3.4E-01	mg/kg	M	9.9E-09	mg/kg-day	2.4E-02	(mg/kg-day) ⁻¹	2.4E-10	
	Benzene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	6.1E-09	mg/kg-day	5.5E-02	(mg/kg-day) ⁻¹	3.4E-10	
	Bromodichloromethane	2.9E-01	mg/kg	2.9E-01	mg/kg	M	8.3E-09	mg/kg-day	9.2E-02	(mg/kg-day) ⁻¹	5.2E-10	
	Carbon tetrachloride	2.9E-01	mg/kg	2.9E-01	mg/kg	M	8.3E-09	mg/kg-day	1.3E-01	(mg/kg-day) ⁻¹	1.1E-09	
	Chlorobenzene	3.3E-01	mg/kg	3.3E-01	mg/kg	M	9.6E-09	mg/kg-day	N/A	N/A	N/A	
	Chloroform	2.9E-01	mg/kg	2.9E-01	mg/kg	M	8.3E-09	mg/kg-day	6.1E-03	(mg/kg-day) ⁻¹	5.1E-11	
	Tetrachloroethylene	2.9E-01	mg/kg	2.9E-01	mg/kg	M	8.3E-09	mg/kg-day	5.2E-02	(mg/kg-day) ⁻¹	4.3E-10	
	Trichloroethane	1.9E-01	mg/kg	1.9E-01	mg/kg	M	5.6E-09	mg/kg-day	1.1E-02	(mg/kg-day) ⁻¹	6.1E-11	
	Xylene (total)	2.4E+01	mg/kg	2.4E+01	mg/kg	M	7.0E-07	mg/kg-day	N/A	N/A	N/A	
	2-Methylnaphthalene	7.3E+00	mg/kg	7.3E+00	mg/kg	M	2.1E-07	mg/kg-day	N/A	N/A	N/A	
	4-Methylphenol	8.5E+00	mg/kg	8.5E+00	mg/kg	M	1.9E-07	mg/kg-day	N/A	N/A	N/A	
	Benzolanthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	5.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.3E-08	
	Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	5.8E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.3E-07	
	Naphthalene	2.3E+01	mg/kg	2.3E+01	mg/kg	M	6.7E-07	mg/kg-day	N/A	N/A	N/A	
	Pentachlorophenol	3.0E+01	mg/kg	3.0E+01	mg/kg	M	8.8E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.1E-07	
	Dieldrin	5.9E-03	mg/kg	5.9E-03	mg/kg	M	1.7E+10	mg/kg-day	1.6E+01	(mg/kg-day) ⁻¹	2.8E+09	
	Dioxin TEQ	1.8E-03	mg/kg	1.8E-03	mg/kg	M	5.3E+11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.9E+06	
	Antimony	3.4E+00	mg/kg	3.4E+00	mg/kg	M	9.9E-08	mg/kg-day	N/A	N/A	N/A	
	Arsenic	8.4E+00	mg/kg	8.4E+00	mg/kg	M	2.5E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.7E-07	
	Barium	4.1E+02	mg/kg	4.1E+02	mg/kg	M	1.2E-06	mg/kg-day	N/A	N/A	N/A	
	Cadmium	2.2E+01	mg/kg	2.2E+01	mg/kg	M	6.3E-07	mg/kg-day	N/A	N/A	N/A	
	Chromium	3.1E+04	mg/kg	3.1E+04	mg/kg	M	9.1E-04	mg/kg-day	N/A	N/A	N/A	
	Cyanide	1.1E+00	mg/kg	1.1E+00	mg/kg	M	3.3E-06	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.5E-05	mg/kg-day	N/A	N/A	N/A	
	Mercury	9.5E+00	mg/kg	9.5E+00	mg/kg	M	2.8E-07	mg/kg-day	N/A	N/A	N/A	
	Thallium	8.4E+00	mg/kg	8.4E+00	mg/kg	M	2.7E-07	mg/kg-day	N/A	N/A	N/A	
	(Total)											5.9E-06
	Dermal	Benzolanthracene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	6.6E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.8E-08
		Benzo(a)pyrene	2.0E+00	mg/kg	2.0E+00	mg/kg	M	6.6E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.8E-07
Naphthalene		2.3E+01	mg/kg	2.3E+01	mg/kg	M	7.6E-07	mg/kg-day	N/A	N/A	N/A	
Pentachlorophenol		3.0E+01	mg/kg	3.0E+01	mg/kg	M	1.8E-06	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	2.3E-07	
Dioxin TEQ		1.8E-03	mg/kg	1.8E-03	mg/kg	M	1.4E+11	mg/kg-day	1.6E+05	(mg/kg-day) ⁻¹	2.1E+06	
Arsenic		8.4E+00	mg/kg	8.4E+00	mg/kg	M	6.4E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	9.6E-08	
Cadmium		2.2E+01	mg/kg	2.2E+01	mg/kg	M	5.5E-09	mg/kg-day	N/A	N/A	N/A	
(Total)											2.9E-06	
Total Risk Across All Exposure Routes/Pathways											1E-05	

(1) Medium-Specific (M) EPC selected for hazard calculation

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

8E-05

TABLE 8.26.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 2
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	7.7E-02	mg/kg	7.7E-02	mg/kg	M	2.7E-08	mg/kg-day	N/A	N/A	N/A
	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	5.5E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.2E-06
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	1.5E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.3E-06
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	7.7E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	5.6E+02	mg/kg	5.6E+02	mg/kg	M	2.0E-04	mg/kg-day	N/A	N/A	N/A
	Cyanide	1.8E+00	mg/kg	1.8E+00	mg/kg	M	6.3E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	5.9E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	3.8E-01	mg/kg	3.8E-01	mg/kg	M	1.3E-07	mg/kg-day	N/A	N/A	N/A
	Thallium	1.8E+00	mg/kg	1.8E+00	mg/kg	M	6.3E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										1.1E-05
Dermal	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	7.1E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-06
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	2.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.0E-07
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	3.4E-09	mg/kg-day	N/A	N/A	N/A
		(Total)									1.4E-06
Total Risk Across All Exposure Routes/Pathways											1E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-05

TABLE 8.26.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 2
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	7.7E-02	mg/kg	7.7E-02	mg/kg	M	2.3E-09	mg/kg-day	N/A	N/A	N/A
	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	4.5E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.8E-07
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	1.3E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.9E-07
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	6.4E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	5.6E+02	mg/kg	5.6E+02	mg/kg	M	1.6E-05	mg/kg-day	N/A	N/A	N/A
	Cyanide	1.8E+00	mg/kg	1.8E+00	mg/kg	M	5.3E-08	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	4.9E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	3.8E-01	mg/kg	3.8E-01	mg/kg	M	1.1E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	1.8E+00	mg/kg	1.8E+00	mg/kg	M	5.3E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										8.8E-07
Dermal	Dioxin TEQ	1.6E-04	mg/kg	1.6E-04	mg/kg	M	1.2E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.8E-07
	Arsenic	4.4E+00	mg/kg	4.4E+00	mg/kg	M	3.4E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.0E-08
	Cadmium	2.2E+00	mg/kg	2.2E+00	mg/kg	M	5.6E-10	mg/kg-day	N/A	N/A	N/A
		(Total)									2.3E-07
Total Risk Across All Exposure Routes/Pathways											1E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-06

TABLE 8.27.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 3
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.6E-03	mg/kg	2.6E-03	mg/kg	M	9.0E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.3E-04
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	1.1E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	2.9E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.3E-06
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	1.5E-05	mg/kg-day	N/A	N/A	N/A
	Chromium	1.8E+04	mg/kg	1.8E+04	mg/kg	M	6.3E-03	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	6.1E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E+01	mg/kg	1.1E+01	mg/kg	M	3.8E-06	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E-01	mg/kg	6.0E-01	mg/kg	M	2.1E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										1.4E-04
Dermal	Dioxin TEQ	2.6E-03	mg/kg	2.6E-03	mg/kg	M	1.2E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.8E-05
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	3.8E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.7E-07
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	6.5E-08	mg/kg-day	N/A	N/A	N/A
		(Total)									1.8E-05
Total Risk Across All Exposure Routes/Pathways											2E-04

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

9E-04

TABLE 8.27.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 3
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	2.4E-04	mg/kg	2.4E-04	mg/kg	M	7.0E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-06
	Antimony	3.0E+00	mg/kg	3.0E+00	mg/kg	M	8.8E-08	mg/kg-day	N/A	N/A	N/A
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	2.4E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.6E-07
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	1.2E-06	mg/kg-day	N/A	N/A	N/A
	Chromium	4.9E+03	mg/kg	4.9E+03	mg/kg	M	1.4E-04	mg/kg-day	N/A	N/A	N/A
	Manganese	1.7E+03	mg/kg	1.7E+03	mg/kg	M	5.1E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E+01	mg/kg	1.1E+01	mg/kg	M	3.2E-07	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E-01	mg/kg	6.0E-01	mg/kg	M	1.8E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										1.4E-06
Dermal	Dioxin TEQ	2.4E-04	mg/kg	2.4E-04	mg/kg	M	1.8E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.7E-07
	Arsenic	8.3E+00	mg/kg	8.3E+00	mg/kg	M	6.3E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	9.4E-08
	Cadmium	4.2E+01	mg/kg	4.2E+01	mg/kg	M	1.1E-08	mg/kg-day	N/A	N/A	N/A
	(Total)										3.7E-07
Total Risk Across All Exposure Routes/Pathways											2E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

9E-06

TABLE 8.28.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 4
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.5E-08
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.5E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.5E-07
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.5E-08
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.5E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.5E-07
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.5E-08
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.5E-08	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	1.9E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	2.3E-08
	Dioxin TEQ	7.7E-04	mg/kg	7.7E-04	mg/kg	M	2.7E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.0E-05
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.6E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.4E-06
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	8.1E-08	mg/kg-day	N/A	N/A	N/A
	Chromium	7.6E+01	mg/kg	7.6E+01	mg/kg	M	2.7E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.8E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.7E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	2.1E+00	mg/kg	2.1E+00	mg/kg	M	7.4E-07	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.1E-08
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.3E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.1E-07
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.1E-08
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.3E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.1E-07
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.1E-08
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.3E-08	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	2.1E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	2.5E-08
	Dioxin TEQ	7.7E-04	mg/kg	7.7E-04	mg/kg	M	3.5E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.3E-06
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	2.1E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.2E-07
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.5E-10	mg/kg-day	N/A	N/A	N/A
		(Total)									6.3E-08
Total Risk Across All Exposure Routes/Pathways											5E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-04

TABLE 8.28.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 4
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.6E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.6E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.8E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.8E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.8E-09
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	1.5E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	1.9E-09
	Dioxin TEQ	1.4E-04	mg/kg	1.4E-04	mg/kg	M	4.0E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.0E-07
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	1.3E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.0E-07
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	6.7E-09	mg/kg-day	N/A	N/A	N/A
	Chromium	7.6E+01	mg/kg	7.6E+01	mg/kg	M	2.2E-06	mg/kg-day	N/A	N/A	N/A
	Manganese	5.1E+02	mg/kg	5.1E+02	mg/kg	M	1.5E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.4E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	2.1E+00	mg/kg	2.1E+00	mg/kg	M	6.1E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										9.1E-07
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.2E-09
	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.2E-08
	Benzo(b)fluoranthene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.2E-09
	Dibenz(a,h)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.2E-08
	Indeno(1,2,3-cd)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.2E-09
	Naphthalene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	5.5E-01	mg/kg	5.5E-01	mg/kg	M	3.5E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	4.2E-09
	Dioxin TEQ	1.4E-04	mg/kg	1.4E-04	mg/kg	M	1.0E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.6E-07
	Arsenic	4.6E+00	mg/kg	4.6E+00	mg/kg	M	3.5E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.3E-08
	Cadmium	2.3E-01	mg/kg	2.3E-01	mg/kg	M	5.8E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										3.3E-07
Total Risk Across All Exposure Routes/Pathways											1E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

5E-08

TABLE 8.29.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 5
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-8)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	3.1E-01	mg/kg	3.1E-01	mg/kg	M	1.1E-07	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	7.9E-07
	bis(2-Chloroethoxy)methane	6.2E-01	mg/kg	6.2E-01	mg/kg	M	2.2E-07	mg/kg-day	N/A	N/A	N/A
	Bis(2-chloroethyl)ether	3.2E-01	mg/kg	3.2E-01	mg/kg	M	1.1E-07	mg/kg-day	1.1E+00	(mg/kg-day) ⁻¹	1.2E-07
	N-Nitroso-di-n-propylamine	4.9E-01	mg/kg	4.9E-01	mg/kg	M	1.7E-07	mg/kg-day	7.0E+00	(mg/kg-day) ⁻¹	1.2E-06
	Nitrobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	8.1E-06	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	2.1E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	2.6E-06
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	2.1E-06	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	4.2E-06
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	6.7E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.0E-04
	Antimony	8.0E+00	mg/kg	8.0E+00	mg/kg	M	2.8E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	5.0E+00	mg/kg	5.0E+00	mg/kg	M	1.8E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.6E-06
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	3.5E-06	mg/kg-day	N/A	N/A	N/A
	Chromium	8.1E+03	mg/kg	8.1E+03	mg/kg	M	2.8E-03	mg/kg-day	N/A	N/A	N/A
	Manganese	1.1E+03	mg/kg	1.1E+03	mg/kg	M	3.9E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	4.7E+00	mg/kg	4.7E+00	mg/kg	M	1.6E-06	mg/kg-day	N/A	N/A	N/A
	Thallium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	4.6E-06	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)pyrene	3.1E-01	mg/kg	3.1E-01	mg/kg	M	6.1E-06	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.5E-07
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	2.3E-07	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	2.8E-06
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	1.3E-06	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	2.6E-06
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	8.8E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.3E-05
	Arsenic	5.0E+00	mg/kg	5.0E+00	mg/kg	M	2.3E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.4E-07
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	1.5E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										1.4E-05
Total Risk Across All Exposure Routes/Pathways											1E-04

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

7E-04

TABLE 8.29.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 5
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.6E-08
	bis(2-Chloroethoxy)methane	6.2E-01	mg/kg	6.2E-01	mg/kg	M	1.8E-08	mg/kg-day	N/A	N/A	N/A
	Bis(2-chloroethyl)ether	2.8E-01	mg/kg	2.8E-01	mg/kg	M	8.1E-09	mg/kg-day	1.1E+00	(mg/kg-day) ⁻¹	6.9E-09
	N-Nitroso-di-n-propylamine	2.9E-01	mg/kg	2.9E-01	mg/kg	M	8.4E-09	mg/kg-day	7.0E+00	(mg/kg-day) ⁻¹	5.9E-08
	Nitrobenzene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	6.7E-09	mg/kg-day	N/A	N/A	N/A
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	1.8E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	2.1E-09
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	1.8E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	3.5E-09
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	5.6E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	8.4E-06
	Antimony	8.0E+00	mg/kg	8.0E+00	mg/kg	M	2.3E-07	mg/kg-day	N/A	N/A	N/A
	Arsenic	2.3E+00	mg/kg	2.3E+00	mg/kg	M	6.6E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	9.9E-08
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	3.0E-07	mg/kg-day	N/A	N/A	N/A
	Chromium	8.1E+03	mg/kg	8.1E+03	mg/kg	M	2.4E-04	mg/kg-day	N/A	N/A	N/A
	Manganese	1.1E+03	mg/kg	1.1E+03	mg/kg	M	3.2E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	1.5E+00	mg/kg	1.5E+00	mg/kg	M	4.4E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	3.6E-07	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)pyrene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.2E-08
	Pentachlorophenol	6.1E-01	mg/kg	6.1E-01	mg/kg	M	3.9E-08	mg/kg-day	1.2E-01	(mg/kg-day) ⁻¹	4.7E-09
	Aroclor 1248	6.0E-02	mg/kg	6.0E-02	mg/kg	M	2.1E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	4.3E-09
	Dioxin TEQ	1.9E-03	mg/kg	1.9E-03	mg/kg	M	1.5E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.2E-06
	Arsenic	2.3E+00	mg/kg	2.3E+00	mg/kg	M	1.7E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.6E-08
	Cadmium	1.0E+01	mg/kg	1.0E+01	mg/kg	M	2.6E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										2.3E-08
Total Risk Across All Exposure Routes/Pathways											1E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

7E-05

TABLE B.30.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acalophenone	9.8E-02	mg/kg	9.8E-02	mg/kg	M	3.4E-08	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.6E-08
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	9.1E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	6.7E-07
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	2.0E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.5E-07
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	6.1E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.5E-07
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	6.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.9E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	3.4E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.0E-07
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	2.5E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.7E-06
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	1.1E-05	mg/kg-day	N/A	N/A	N/A
	Manganese	6.8E+02	mg/kg	6.8E+02	mg/kg	M	2.4E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E-01	mg/kg	1.1E-01	mg/kg	M	3.9E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E+00	mg/kg	6.0E+00	mg/kg	M	2.1E-06	mg/kg-day	N/A	N/A	N/A
	Vanadium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	4.5E-06	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.2E-08
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	6.2E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.8E-07
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	1.1E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	8.4E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	3.5E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.5E-07
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	3.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.8E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	4.4E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.8E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	3.2E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.8E-07
	(Total)										1.3E-06
Total Risk Across All Exposure Routes/Pathways											7E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-05

TABLE 8.30.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	9.8E-02	mg/kg	9.8E-02	mg/kg	M	2.9E-09	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.4E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.7E-09
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	7.6E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.5E-08
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	5.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.7E-08
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	5.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.1E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	2.7E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.1E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	2.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.1E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	9.3E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	6.8E+02	mg/kg	6.8E+02	mg/kg	M	2.0E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E-01	mg/kg	1.1E-01	mg/kg	M	3.2E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.8E-07	mg/kg-day	N/A	N/A	N/A
	Vanadium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	3.7E-07	mg/kg-day	N/A	N/A	N/A
	(Total)										4.6E-07
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	7.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.3E-09
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	8.6E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	6.3E-08
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	1.9E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.4E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	5.8E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	4.2E-08
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	6.3E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.6E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	7.1E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.1E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	6.3E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.0E-08
	(Total)										2.2E-07
Total Risk Across All Exposure Routes/Pathways											7E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-06

TABLE 8.31.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 1
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Arsenic	2.4E+00	µg/L	2.4E+00	µg/L	M	6.5E-09	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	9.8E-09
	Manganese	1.0E+03	µg/L	1.0E+03	µg/L	M	2.8E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	3.5E-01	µg/L	3.5E-01	µg/L	M	9.5E-10	mg/kg-day	N/A	N/A	N/A
	Thallium	1.6E+00	µg/L	1.6E+00	µg/L	M	4.4E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										9.8E-09
Total Risk Across All Exposure Routes/Pathways											1E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.31.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 1
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Arsenic	2.4E+00	µg/L	2.4E+00	µg/L	M	5.4E-10	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	8.2E-10
	Manganese	1.0E+03	µg/L	1.0E+03	µg/L	M	2.4E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	3.5E-01	µg/L	3.5E-01	µg/L	M	7.9E-11	mg/kg-day	N/A	N/A	N/A
	Thallium	1.6E+00	µg/L	1.6E+00	µg/L	M	3.6E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										8.2E-10
Total Risk Across All Exposure Routes/Pathways											8E-10

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor.

TABLE 8.32.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 2
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	5.0E-07	µg/L	5.0E-07	µg/L	M	4.4E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.5E-07
	Manganese (Total)	7.4E+02	µg/L	7.4E+02	µg/L	M	2.0E-08	mg/kg-day	N/A	N/A	N/A
Total Risk Across All Exposure Routes/Pathways											7E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-06

TABLE 8.32.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 2
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	5.0E-07	µg/L	5.0E-07	µg/L	M	5.1E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	7.7E-08
	Manganese (Total)	7.4E+02	µg/L	7.4E+02	µg/L	M	1.7E-07	mg/kg-day	N/A	N/A	N/A 7.7E-08
Total Risk Across All Exposure Routes/Pathways											8E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

5E-07

TABLE 8.33.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 4
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.3E-08	µg/L	4.3E-08	µg/L	M	3.8E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.6E-08
	Manganese	1.1E+03	µg/L	1.1E+03	µg/L	M	3.1E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	2.0E-01	µg/L	2.0E-01	µg/L	M	5.4E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										5.6E-08
Total Risk Across All Exposure Routes/Pathways											6E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-07

TABLE 8.33.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoon 4
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.3E-08	µg/L	4.3E-08	µg/L	M	4.4E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.6E-09
	Manganese	4.7E+02	µg/L	4.7E+02	µg/L	M	1.1E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	1.0E-01	µg/L	1.0E-01	µg/L	M	2.3E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										6.6E-09
Total Risk Across All Exposure Routes/Pathways											7E-09

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-08

TABLE 8.34.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 5
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.2E-07	µg/L	4.2E-07	µg/L	M	3.7E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.5E-07
	Chromium	1.2E+01	µg/L	1.2E+01	µg/L	M	6.7E-08	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+02	µg/L	2.6E+02	µg/L	M	7.0E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	2.1E-01	µg/L	2.1E-01	µg/L	M	5.7E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										5.5E-07
Total Risk Across All Exposure Routes/Pathways											6E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

3E-06

TABLE 8.34.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Lagoon 5
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Dioxin TEQ	4.2E-07	µg/L	4.2E-07	µg/L	M	4.3E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	6.5E-08
	Chromium	1.2E+01	µg/L	1.2E+01	µg/L	M	5.6E-09	mg/kg-day	N/A	N/A	N/A
	Manganese	2.6E+02	µg/L	2.6E+02	µg/L	M	5.9E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	2.1E-01	µg/L	2.1E-01	µg/L	M	4.8E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										6.5E-08
Total Risk Across All Exposure Routes/Pathways											6E-08

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

4E-07

TABLE 8.35.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Hoosic River
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	1.8E-06	µg/L	1.8E-06	µg/L	M	2.1E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.2E-08
	Manganese	5.3E+02	µg/L	5.3E+02	µg/L	M	6.2E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	5.9E-09	mg/kg-day	N/A	N/A	N/A
	(Total)										3.2E-08
Dermal	Dioxin TEQ	1.8E-06	µg/L	1.8E-06	µg/L	M	2.5E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.7E-06
	Manganese	5.3E+02	µg/L	5.3E+02	µg/L	M	3.6E-06	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	3.4E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										3.7E-06
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to 2E-05

TABLE 8.35.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Surface Water
 Exposure Medium: Surface Water
 Exposure Point: Hoosic River
 Receptor Population: Park Visitor
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Dioxin TEQ	4.6E-07	µg/L	4.6E-07	µg/L	M	1.8E-15	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.7E-10
	Manganese	1.2E+02	µg/L	1.2E+02	µg/L	M	4.8E-07	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	2.0E-10	mg/kg-day	N/A	N/A	N/A
	(Total)										2.7E-10
Dermal	Dioxin TEQ	4.6E-07	µg/L	4.6E-07	µg/L	M	1.9E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.8E-07
	Manganese	1.2E+02	µg/L	1.2E+02	µg/L	M	2.8E-08	mg/kg-day	N/A	N/A	N/A
	Mercury	5.0E-02	µg/L	5.0E-02	µg/L	M	1.1E-11	mg/kg-day	N/A	N/A	N/A
	(Total)										2.8E-07
Total Risk Across All Exposure Routes/Pathways											3E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to 2E-06

TABLE 8.36.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Hoosic River
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	9.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	7.1E-08	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.4E-07	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	8.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	6.2E-08	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	3.9E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.9E-07	
	Indeno(1,2,3-cd)pyrene	2.9E-01	mg/kg	2.9E-01	mg/kg	M	4.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.2E-08	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	1.4E-07	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	1.2E-08	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	2.5E-08	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	6.8E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.3E-08	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	9.3E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.4E-04	
	Dioxin TEQ	7.3E-05	mg/kg	7.3E-05	mg/kg	M	1.4E-11	mg/kg-day	1.5E+06	(mg/kg-day) ⁻¹	2.1E-06	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	9.9E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.5E-08	
	Chromium	2.3E+01	mg/kg	2.3E+01	mg/kg	M	4.2E-08	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.8E+02	mg/kg	5.8E+02	mg/kg	M	1.1E-04	mg/kg-day	N/A	N/A	N/A	
	Mercury	4.9E-01	mg/kg	4.9E-01	mg/kg	M	9.2E-08	mg/kg-day	N/A	N/A	N/A	
	(Total)										1.4E-04	
Dermal	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	5.5E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.0E-08	
	Benzo(e)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	2.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.9E-07	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	4.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.5E-08	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	2.2E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.6E-07	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	2.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.8E-08	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	8.0E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	7.6E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.5E-08	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	4.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	8.0E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	1.2E-10	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.8E-05	
	Dioxin TEQ	7.3E-05	mg/kg	7.3E-05	mg/kg	M	1.8E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.7E-07	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	1.3E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.9E-07	
		(Total)										1.9E-05
	Total Risk Across All Exposure Routes/Pathways											2E-04

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

1E-03

TABLE 8.36.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Hoosic River
Receptor Population: Park Visitor
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk	
Ingestion	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	8.2E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	6.0E-09	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	3.9E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.9E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	7.0E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.1E-09	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	3.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.4E-08	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	3.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.6E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	1.2E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	1.0E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	2.1E-09	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	5.5E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.1E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	7.8E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	1.2E-05	
	Dioxin TEQ	8.9E-06	mg/kg	8.9E-06	mg/kg	M	1.4E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.1E-08	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	8.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.2E-07	
	Chromium	2.3E+01	mg/kg	2.3E+01	mg/kg	M	3.5E-07	mg/kg-day	N/A	N/A	N/A	
	Manganese	5.8E+02	mg/kg	5.8E+02	mg/kg	M	9.1E-06	mg/kg-day	N/A	N/A	N/A	
	Mercury	4.8E-01	mg/kg	4.8E-01	mg/kg	M	7.7E-09	mg/kg-day	N/A	N/A	N/A	
		(Total)										1.2E-05
Dermal	Benzo(a)anthracene	5.2E-01	mg/kg	5.2E-01	mg/kg	M	9.2E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	6.7E-09	
	Benzo(a)pyrene	2.5E-01	mg/kg	2.5E-01	mg/kg	M	4.4E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.2E-08	
	Benzo(b)fluoranthene	4.5E-01	mg/kg	4.5E-01	mg/kg	M	8.0E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	5.8E-09	
	Dibenz(a,h)anthracene	2.1E-01	mg/kg	2.1E-01	mg/kg	M	3.7E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.7E-08	
	Indeno(1,2,3-cd)pyrene	2.3E-01	mg/kg	2.3E-01	mg/kg	M	4.1E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.0E-09	
	Phenanthrene	7.5E-01	mg/kg	7.5E-01	mg/kg	M	1.3E-08	mg/kg-day	N/A	N/A	N/A	
	Aroclor 1254	6.6E-02	mg/kg	6.6E-02	mg/kg	M	1.3E-09	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	2.5E-09	
	Aroclor 1260	3.5E-02	mg/kg	3.5E-02	mg/kg	M	6.7E-10	mg/kg-day	2.0E+00	(mg/kg-day) ⁻¹	1.3E-09	
	PCB TEQ	5.0E-03	mg/kg	5.0E-03	mg/kg	M	2.0E-11	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.0E-06	
	Dioxin TEQ	8.9E-06	mg/kg	8.9E-06	mg/kg	M	3.6E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	5.4E-09	
	Arsenic	5.3E+00	mg/kg	5.3E+00	mg/kg	M	2.2E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.2E-08	
		(Total)										3.2E-06
	Total Risk Across All Exposure Routes/Pathways											1E-05

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

9E-05

TABLE 8.37.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-001)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony (Total)	1.6E+00	µg/L	1.6E+00	µg/L	M	1.5E-05	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.37.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-001)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony (Total)	9.1E-01	µg/L	9.1E-01	µg/L	M	1.7E-06	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.38.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-002)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	3.0E+00	µg/L	3.0E+00	µg/L	M	2.8E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.2E-05 4.2E-05
Total Risk Across All Exposure Routes/Pathways											4E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.38.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-002)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	2.2E+00	µg/L	2.2E+00	µg/L	M	4.1E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.2E-06 6.2E-06
Total Risk Across All Exposure Routes/Pathways											6E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.39.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-003)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Bis(2-ethylhexyl)phthalate	1.2E+01	µg/L	1.2E+01	µg/L	M	1.1E-04	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	1.6E-06
	Antimony	2.0E+00	µg/L	2.0E+00	µg/L	M	1.9E-05	mg/kg-day	N/A	N/A	N/A
	Arsenic	5.0E+00	µg/L	5.0E+00	µg/L	M	4.7E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.0E-05
	Manganese	2.3E+02	µg/L	2.3E+02	µg/L	M	2.2E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										7.2E-05
Total Risk Across All Exposure Routes/Pathways											7E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.39.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-003)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Bis(2-ethylhexyl)phthalate	6.5E+00	µg/L	6.5E+00	µg/L	M	1.2E-05	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	1.7E-07
	Antimony	1.3E+00	µg/L	1.3E+00	µg/L	M	2.5E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	4.9E+00	µg/L	4.9E+00	µg/L	M	9.3E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.4E-05
	Manganese	2.1E+02	µg/L	2.1E+02	µg/L	M	4.0E-04	mg/kg-day	N/A	N/A	N/A
	(Total)										1.4E-05
Total Risk Across All Exposure Routes/Pathways											1E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.40.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-004)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Manganese (Total)	2.4E+02	µg/L	2.4E+02	µg/L	M	2.2E-03	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.40.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-004)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Manganese (Total)	2.1E+02	µg/L	2.1E+02	µg/L	M	4.0E-04	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.41.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-006)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Methyl tert-butyl ether	4.4E+00	µg/L	4.4E+00	µg/L	M	4.1E-05	mg/kg-day	N/A	N/A	N/A
	Bis(2-ethylhexyl)phthalate	3.6E+01	µg/L	3.6E+01	µg/L	M	3.4E-04	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	4.7E-06
	Thallium	1.4E+00	µg/L	1.4E+00	µg/L	M	1.3E-05	mg/kg-day	N/A	N/A	N/A
	(Total)										4.7E-06
Total Risk Across All Exposure Routes/Pathways											5E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.41.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-006)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Methyl tert-butyl ether	2.5E+00	µg/L	2.5E+00	µg/L	M	4.7E-06	mg/kg-day	N/A	N/A	N/A
	Bis(2-ethylhexyl)phthalate	1.9E+01	µg/L	1.9E+01	µg/L	M	3.7E-05	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	5.2E-07
	Thallium	1.4E+00	µg/L	1.4E+00	µg/L	M	2.7E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										5.2E-07
Total Risk Across All Exposure Routes/Pathways											5E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.42.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-007)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.9E+00	µg/L	1.9E+00	µg/L	M	1.8E-05	mg/kg-day	N/A	N/A	N/A
	Arsenic	4.9E-01	µg/L	4.9E-01	µg/L	M	4.6E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.9E-06
	(Total)										6.9E-06
Total Risk Across All Exposure Routes/Pathways											7E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.42.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-007)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.2E+00	µg/L	1.2E+00	µg/L	M	2.3E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	4.2E-01	µg/L	4.2E-01	µg/L	M	8.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.2E-06
	(Total)										1.2E-06
Total Risk Across All Exposure Routes/Pathways											1E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.44.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-010)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	1.6E+00	µg/L	1.6E+00	µg/L	M	1.5E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.3E-05
	Manganese	6.6E+02	µg/L	6.6E+02	µg/L	M	6.2E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										2.3E-05
Total Risk Across All Exposure Routes/Pathways											2E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.44.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-010)
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	1.6E+00	µg/L	1.6E+00	µg/L	M	3.1E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.6E-06
	Manganese	6.6E+02	µg/L	6.6E+02	µg/L	M	1.3E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										4.6E-06
Total Risk Across All Exposure Routes/Pathways											5E-06

(1) Medium-Specific (M) EPC selected for risk calculation.
 - - Not detected at this exposure point.
 N/A = Not Applicable
 EPC = Exposure Point Concentration
 Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.45.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-001)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony (Total)	1.6E+00	µg/L	1.6E+00	µg/L	M	1.3E-05	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.45.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-001)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony (Total)	9.1E-01	µg/L	9.1E-01	µg/L	M	1.4E-06	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.46.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-002)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	3.0E+00	µg/L	3.0E+00	µg/L	M	2.5E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.7E-05 3.7E-05
Total Risk Across All Exposure Routes/Pathways											4E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.46.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-002)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	2.2E+00	µg/L	2.2E+00	µg/L	M	3.4E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.1E-06 5.1E-06
Total Risk Across All Exposure Routes/Pathways											5E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.47.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-003)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Bis(2-ethylhexyl)phthalate	1.2E+01	µg/L	1.2E+01	µg/L	M	9.9E-05	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	1.4E-06
	Antimony	2.0E+00	µg/L	2.0E+00	µg/L	M	1.6E-05	mg/kg-day	N/A	N/A	N/A
	Arsenic	5.0E+00	µg/L	5.0E+00	µg/L	M	4.1E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.2E-05
	Manganese	2.3E+02	µg/L	2.3E+02	µg/L	M	1.9E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										6.3E-05
Total Risk Across All Exposure Routes/Pathways											6E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

- - Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.47.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-003)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Bis(2-ethylhexyl)phthalate	6.5E+00	µg/L	6.5E+00	µg/L	M	1.0E-05	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	1.4E-07
	Antimony	1.3E+00	µg/L	1.3E+00	µg/L	M	2.1E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	4.9E+00	µg/L	4.9E+00	µg/L	M	7.7E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.2E-05
	Manganese	2.1E+02	µg/L	2.1E+02	µg/L	M	3.3E-04	mg/kg-day	N/A	N/A	N/A
	(Total)										1.2E-05
Total Risk Across All Exposure Routes/Pathways											1E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.48.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-004)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Manganese (Total)	2.4E+02	µg/L	2.4E+02	µg/L	M	1.9E-03	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.48.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-004)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Manganese (Total)	2.1E+02	µg/L	2.1E+02	µg/L	M	3.3E-04	mg/kg-day	N/A	N/A	N/A N/A
Total Risk Across All Exposure Routes/Pathways											N/A

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.49.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-006)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Methyl tert-butyl ether	4.4E+00	µg/L	4.4E+00	µg/L	M	3.6E-05	mg/kg-day	N/A	N/A	N/A
	Bis(2-ethylhexyl)phthalate	3.6E+01	µg/L	3.6E+01	µg/L	M	3.0E-04	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	4.1E-06
	Thallium	1.4E+00	µg/L	1.4E+00	µg/L	M	1.2E-05	mg/kg-day	N/A	N/A	N/A
	(Total)										4.1E-06
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE B.49.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-006)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Methyl tert-butyl ether	2.5E+00	µg/L	2.5E+00	µg/L	M	3.9E-06	mg/kg-day	N/A	N/A	N/A
	Bis(2-ethylhexyl)phthalate	1.9E+01	µg/L	1.9E+01	µg/L	M	3.1E-05	mg/kg-day	1.4E-02	(mg/kg-day) ⁻¹	4.3E-07
	Thallium	1.4E+00	µg/L	1.4E+00	µg/L	M	2.2E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										4.3E-07
Total Risk Across All Exposure Routes/Pathways											4E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.50.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-007)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.9E+00	µg/L	1.9E+00	µg/L	M	1.6E-05	mg/kg-day	N/A	N/A	N/A
	Arsenic	4.9E-01	µg/L	4.9E-01	µg/L	M	4.0E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.0E-06
	(Total)										6.0E-06
Total Risk Across All Exposure Routes/Pathways											6E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.50.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-007)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.2E+00	µg/L	1.2E+00	µg/L	M	1.9E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	4.2E-01	µg/L	4.2E-01	µg/L	M	6.6E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.0E-06
	(Total)										1.0E-06
Total Risk Across All Exposure Routes/Pathways											1E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.51.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-008)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	3.1E+00	µg/L	3.1E+00	µg/L	M	2.5E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.8E-05
	Manganese	5.0E+02	µg/L	5.0E+02	µg/L	M	4.1E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										3.8E-05
Total Risk Across All Exposure Routes/Pathways											4E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.51.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-008)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	2.5E+00	µg/L	2.5E+00	µg/L	M	4.0E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	6.0E-06
	Manganese	3.4E+02	µg/L	3.4E+02	µg/L	M	5.3E-04	mg/kg-day	N/A	N/A	N/A
	(Total)										6.0E-06
Total Risk Across All Exposure Routes/Pathways											6E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.52.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Tap Water (Residential Well - RW-010)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	1.6E+00	µg/L	1.6E+00	µg/L	M	1.3E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.0E-05
	Manganese	6.6E+02	µg/L	6.6E+02	µg/L	M	5.5E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										2.0E-05
Total Risk Across All Exposure Routes/Pathways											2E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.52.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater.
 Exposure Point: Tap Water (Residential Well - RW-010)
 Receptor Population: Resident
 Receptor Age: Young Child (Ages 1-6)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	1.6E+00	µg/L	1.6E+00	µg/L	M	2.5E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.8E-06
	Manganese	6.6E+02	µg/L	6.6E+02	µg/L	M	1.1E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										3.8E-06
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.53.RME
CALCULATION OF CANCER RISKS
REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	9.8E-02	mg/kg	9.8E-02	mg/kg	M	2.0E-08	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	4.4E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	3.2E-08
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	5.2E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.8E-07
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	1.2E-07	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	8.5E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	3.5E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.6E-07
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	3.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	2.8E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	1.9E-12	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	2.9E-07
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	1.4E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.1E-06
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	6.4E-06	mg/kg-day	N/A	N/A	N/A
	Manganese	6.8E+02	mg/kg	6.8E+02	mg/kg	M	1.4E-04	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E-01	mg/kg	1.1E-01	mg/kg	M	2.2E-08	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.2E-06	mg/kg-day	N/A	N/A	N/A
	Vanadium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	2.6E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										3.2E-06
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	2.3E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.7E-08
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	2.7E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	2.0E-07
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	6.0E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.4E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	1.8E-08	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	1.3E-07
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	2.0E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.4E-08
	Dioxin TEQ	9.6E-06	mg/kg	9.6E-06	mg/kg	M	2.3E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	3.5E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	1.7E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.5E-07
	(Total)										6.9E-07
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

6E-06

TABLE B.53.CT
CALCULATION OF CANCER RISKS
CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Acetophenone	9.8E-02	mg/kg	9.8E-02	mg/kg	M	2.9E-09	mg/kg-day	N/A	N/A	N/A
	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.5E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.7E-09
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	7.6E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.6E-08
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	1.7E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.2E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	5.1E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.8E-08
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	5.6E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.1E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	2.8E-13	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	4.1E-08
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	2.1E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.1E-07
	Chromium	3.2E+01	mg/kg	3.2E+01	mg/kg	M	9.3E-07	mg/kg-day	N/A	N/A	N/A
	Manganese	6.8E+02	mg/kg	6.8E+02	mg/kg	M	2.0E-05	mg/kg-day	N/A	N/A	N/A
	Mercury	1.1E-01	mg/kg	1.1E-01	mg/kg	M	3.2E-09	mg/kg-day	N/A	N/A	N/A
	Thallium	6.0E+00	mg/kg	6.0E+00	mg/kg	M	1.8E-07	mg/kg-day	N/A	N/A	N/A
	Vanadium	1.3E+01	mg/kg	1.3E+01	mg/kg	M	3.7E-07	mg/kg-day	N/A	N/A	N/A
		(Total)									
Dermal	Benzo(a)anthracene	2.2E-01	mg/kg	2.2E-01	mg/kg	M	6.7E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.9E-09
	Benzo(a)pyrene	2.6E-01	mg/kg	2.6E-01	mg/kg	M	7.9E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	5.8E-08
	Benzo(b)fluoranthene	5.8E-01	mg/kg	5.8E-01	mg/kg	M	1.8E-08	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	1.3E-08
	Dibenz(a,h)anthracene	1.8E-01	mg/kg	1.8E-01	mg/kg	M	5.3E-09	mg/kg-day	7.3E+00	(mg/kg-day) ⁻¹	3.9E-08
	Indeno(1,2,3-cd)pyrene	1.9E-01	mg/kg	1.9E-01	mg/kg	M	5.8E-09	mg/kg-day	7.3E-01	(mg/kg-day) ⁻¹	4.2E-09
	Dioxin TEQ	9.4E-06	mg/kg	9.4E-06	mg/kg	M	6.6E-14	mg/kg-day	1.5E+05	(mg/kg-day) ⁻¹	9.9E-09
	Arsenic	7.0E+00	mg/kg	7.0E+00	mg/kg	M	4.9E-08	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.4E-08
	(Total)										2.0E-07
Total Risk Across All Exposure Routes/Pathways											7E-07

(1) Medium-Specific (M) EPC selected for hazard calculation.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

Should the dioxin slope factor be revised as proposed, the risk for this receptor would increase to

9E-07

TABLE 8.54.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-101U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Methylene chloride	2.6E+01	µg/L	2.6E+01	µg/L	M	2.4E-04	mg/kg-day	7.5E-03	(mg/kg-day) ⁻¹	1.8E-06
	Antimony	1.7E+00	µg/L	1.7E+00	µg/L	M	1.6E-05	mg/kg-day	N/A	N/A	N/A
	Arsenic	1.5E+00	µg/L	1.5E+00	µg/L	M	1.4E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.1E-05
	Chromium	1.1E+01	µg/L	1.1E+01	µg/L	M	1.1E-04	mg/kg-day	N/A	N/A	N/A
	Manganese	2.1E+02	µg/L	2.1E+02	µg/L	M	2.0E-03	mg/kg-day	N/A	N/A	N/A
	Thallium	8.5E-01	µg/L	8.5E-01	µg/L	M	8.0E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										
Total Risk Across All Exposure Routes/Pathways											2E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.54.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-101U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Methylene chloride	9.8E+00	µg/L	9.8E+00	µg/L	M	1.9E-05	mg/kg-day	7.5E-03	(mg/kg-day) ⁻¹	1.4E-07
	Antimony	8.5E-01	µg/L	8.5E-01	µg/L	M	1.6E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	6.1E-01	µg/L	6.1E-01	µg/L	M	1.2E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.8E-06
	Chromium	4.3E+00	µg/L	4.3E+00	µg/L	M	8.2E-06	mg/kg-day	N/A	N/A	N/A
	Manganese	8.6E+01	µg/L	8.6E+01	µg/L	M	1.7E-04	mg/kg-day	N/A	N/A	N/A
	Thallium	7.6E-01	µg/L	7.6E-01	µg/L	M	1.4E-06	mg/kg-day	N/A	N/A	N/A
	(Total)										
Total Risk Across All Exposure Routes/Pathways											2E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

- - Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer intake x Cancer Slope Factor

TABLE 8.55.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-102U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	2.6E-01	µg/L	2.6E-01	µg/L	M	2.4E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.7E-06 3.7E-06
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.55.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-102U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	2.6E-01	µg/L	2.6E-01	µg/L	M	5.0E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	7.5E-07 7.5E-07
Total Risk Across All Exposure Routes/Pathways											7E-07

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.56.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-103R
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	2.1E+00	µg/L	2.1E+00	µg/L	M	2.0E-05	mg/kg-day	N/A	N/A	N/A
	Arsenic	1.9E+00	µg/L	1.9E+00	µg/L	M	1.8E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.7E-05
	Manganese	1.3E+02	µg/L	1.3E+02	µg/L	M	1.2E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										2.7E-05
Total Risk Across All Exposure Routes/Pathways											3E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.56.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNA TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-103R
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.2E+00	µg/L	1.2E+00	µg/L	M	2.2E-06	mg/kg-day	N/A	N/A	N/A
	Arsenic	1.5E+00	µg/L	1.5E+00	µg/L	M	2.8E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	4.2E-06
	Manganese	1.0E+02	µg/L	1.0E+02	µg/L	M	2.0E-04	mg/kg-day	N/A	N/A	N/A
	(Total)										4.2E-06
Total Risk Across All Exposure Routes/Pathways											4E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

- - Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.57.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-103U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic (Total)	8.1E-01	µg/L	8.1E-01	µg/L	M	7.6E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.1E-05 1.1E-05
Total Risk Across All Exposure Routes/Pathways											1E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.57.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-103U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	4.9E-01	µg/L	4.9E-01	µg/L	M	9.5E-07	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	1.4E-06
	(Total)										1.4E-06
Total Risk Across All Exposure Routes/Pathways											1E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.58.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-104U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	2.2E+00	µg/L	2.2E+00	µg/L	M	2.1E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	3.1E-05
	Manganese	1.1E+03	µg/L	1.1E+03	µg/L	M	1.0E-02	mg/kg-day	N/A	N/A	N/A
	(Total)										3.1E-05
Total Risk Across All Exposure Routes/Pathways											3E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.58.CT
 CALCULATION OF CANCER RISKS
 CENTRAL TENDENCY

POWNAL TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-104U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	2.0E+00	µg/L	2.0E+00	µg/L	M	3.9E-06	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	5.8E-06
	Manganese	7.4E+02	µg/L	7.4E+02	µg/L	M	1.4E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										5.8E-06
Total Risk Across All Exposure Routes/Pathways											6E-06

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor

TABLE 8.59.RME
 CALCULATION OF CANCER RISKS
 REASONABLE MAXIMUM EXPOSURE

POWNAI TANNERY

Scenario Timeframe: Future
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: On-Site Monitoring Well - MW-108U
 Receptor Population: Resident
 Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Arsenic	1.8E+00	µg/L	1.8E+00	µg/L	M	1.7E-05	mg/kg-day	1.5E+00	(mg/kg-day) ⁻¹	2.5E-05
	Manganese	4.4E+02	µg/L	4.4E+02	µg/L	M	4.1E-03	mg/kg-day	N/A	N/A	N/A
	(Total)										2.5E-05
Total Risk Across All Exposure Routes/Pathways											3E-05

(1) Medium-Specific (M) EPC selected for risk calculation.

-- Not detected at this exposure point.

N/A = Not Applicable

EPC = Exposure Point Concentration

Cancer Risk = Cancer Intake x Cancer Slope Factor