TABLE 3.0

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

TABLE 3.1
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 1

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)pyrene	mg/kg	1.5E-01	2.9E-01	9.0E-02	J	mg/kg	9.0E-02	Max	(2)	9.0E-02	Max	(4)
Dioxin TEQ	mg/kg	5.3E-05	5.1E-02	2.1E-04	J	mg/kg	2.1E-04	Max	(2)	5.3E-05	Mean	(3)
Antimony	mg/kg	9.2E-01	2.3E+00	3.4E+00	J	mg/kg	2.3E+00	95% UCL		2.3E+00	95% UCL	
Arsenic	mg/kg	7.5E+00	1.3E+01	1.3E+01		mg/kg	1.3E+01	95% UCL		1.3E+01	95% UCL	
Cadmium	mg/kg	2.6E+00	6.2E+03	7.6E+00		mg/kg	7.6E+00	Max	(2)	2.6E+00	Mean	(3)
Chromium	mg/kg	1.2E+03	4.5E+06	3.8E+03		mg/kg	3.8E+03	Max	(2)	1.2E+03	Mean	(3)
Manganese	mg/kg	6.5E+02	8.9E+02	1.2E+03		mg/kg	8.9E+02	95% UCL		8.9E+02	95% UCL	
Mercury	mg/kg	5.0E-01	2.0E+01	2.0E+00	J	mg/kg	2.0E+00	Max	(2)	5.0E-01	Mean	(3)
Thallium	mg/kg	5.4E+00	4.5E+02	1.4E+01		mg/kg	1.4E+01	Max	(2)	5.4E+00	Mean	(3)

(1) Only COPCs selected on Table 2.1 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.2
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 1

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
1,2-Dichlorobenzene	mg/kg	4.7E+01	4.0E+00	5.5E+02	J	mg/kg	4.0E+00	95% UCL		4.0E+00	95% UCL	
1,2-Dichloroethane	mg/kg	8.4E-01	2.9E-01	1.4E+01	J	mg/kg	2.9E-01	95% UCL		2.9E-01	95% UCL	
1,3-Dichlorobenzene	mg/kg	1.6E+00	1.9E-01	2.9E+01	J	mg/kg	1.9E-01	95% UCL		1.9E-01	95% UCL	
1,4-Dichlorobenzene	mg/kg	8.5E+00	3.4E-01	1.1E+02	J	mg/kg	3.4E-01	95% UCL		3.4E-01	95% UCL	
Benzene	mg/kg	3.7E-01	2.1E-01	3.9E+00	J	mg/kg	2.1E-01	95% UCL		2.1E-01	95% UCL	
Bromodichloromethane	mg/kg	1.4E+00	2.9E-01	2.7E+01	J	mg/kg	2.9E-01	95% UCL		2.9E-01	95% UCL	
Carbon tetrachloride	mg/kg	6.8E-01	2.9E-01	1.0E+01	J	mg/kg	2.9E-01	95% UCL		2.9E-01	95% UCL	
Chlorobenzene	mg/kg	1.1E+00	3.3E-01	1.9E+01	J	mg/kg	3.3E-01	95% UCL		3.3E-01	95% UCL	
Chloroform	mg/kg	1.9E+00	2.9E-01	3.8E+01	J	mg/kg	2.9E-01	95% UCL		2.9E-01	95% UCL	
Tetrachloroethylene	mg/kg	5.1E-01	2.9E-01	6.7E+00	J	mg/kg	2.9E-01	95% UCL		2.9E-01	95% UCL	
Trichloroethane	mg/kg	7.2E-01	1.9E-01	1.2E+01	J	mg/kg	1.9E-01	95% UCL		1.9E-01	95% UCL	
Xylene (total)	mg/kg	1.6E+01	2.4E+01	6.9E+01	J	mg/kg	2.4E+01	95% UCL		2.4E+01	95% UCL	
2-Methylnaphthalene	mg/kg	4.9E+00	7.3E+00	1.8E+01	J	mg/kg	7.3E+00	95% UCL		7.3E+00	95% UCL	
4-Methylphenol	mg/kg	3.6E+01	6.5E+00	3.8E+02	J	mg/kg	6.5E+00	95% UCL		6.5E+00	95% UCL	
Benzo(a)anthracene	mg/kg	2.6E+00	2.0E+00	2.0E+00	J	mg/kg	2.0E+00	Max	(2)	2.0E+00	Max	(5)
Benzo(a)pyrene	mg/kg	2.5E+00	2.0E+00	2.0E+00	J	mg/kg	2.0E+00	Max	(2)	2.0E+00	Max	(5)
Naphthalene	mg/kg	1.9E+01	2.3E+01	7.5E+01	J	mg/kg	2.3E+01	95% UCL		2.3E+01	95% UCL	
Pentachlorophenol	mg/kg	2.2E+01	3.0E+01	9.2E+01	J	mg/kg	3.0E+01	95% UCL		3.0E+01	95% UCL	
Dieldrin	mg/kg	9.2E-03	5.9E-03	1.0E-01	J	mg/kg	5.9E-03	95% UCL		5.9E-03	95% UCL	
Dioxin TEQ	mg/kg	1.8E-03	6.4E+00	1.2E-02	J	mg/kg	1.2E-02	Max	(2)	1.8E-03	Mean	(4)
Antimony	mg/kg	1.5E+01	3.4E+00	7.9E+01	J	mg/kg	3.4E+00	95% UCL		3.4E+00	95% UCL	
Arsenic	mg/kg	6.4E+00	8.4E+00	2.1E+01	J	mg/kg	8.4E+00	95% UCL		8.4E+00	95% UCL	
Barium	mg/kg	2.5E+02	4.1E+02	1.5E+03	J	mg/kg	4.1E+02	95% UCL		4.1E+02	95% UCL	
Cadmium	mg/kg	4.0E+01	2.2E+01	4.3E+02	J	mg/kg	2.2E+01	95% UCL		2.2E+01	95% UCL	
Chromium	mg/kg	2.1E+04	3.1E+04	7.3E+04	J	mg/kg	3.1E+04	95% UCL		3.1E+04	95% UCL	
Cyanide	mg/kg	4.0E-01	1.1E+00	2.7E+00	J	mg/kg	1.1E+00	95% UCL		1.1E+00	95% UCL	
Lead	mg/kg	7.9E+02	1.1E+03	2.9E+03	J	mg/kg	1.1E+03	95% UCL		1.1E+03	95% UCL	
Manganese	mg/kg	3.9E+02	5.1E+02	1.2E+03		mg/kg	5.1E+02	95% UCL		5.1E+02	95% UCL	
Mercury	mg/kg	9.5E+00	1.2E+02	8.5E+01	J	mg/kg	8.5E+01	Max	(2)	9.5E+00	Mean	(4)
Thallium	mg/kg	5.3E+00	9.4E+00	1.8E+01		mg/kg	9.4E+00	95% UCL		9.4E+00	95% UCL	

(1) Only COPCs selected on Table 2.2 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were normal: Dioxin TEQ, arsenic, barium, cyanide, manganese, and mercury. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(5) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.3
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 2

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	mg/kg	1.6E-04	2.7E-04	2.8E-04	J	mg/kg	2.7E-04	95% UCL		2.7E-04	95% UCL	
Arsenic	mg/kg	3.3E+00	4.0E+00	4.7E+00		mg/kg	4.0E+00	95% UCL		4.0E+00	95% UCL	
Cadmium	mg/kg	2.2E+00	3.2E+00	4.6E+00		mg/kg	3.2E+00	95% UCL		3.2E+00	95% UCL	
Chromium	mg/kg	5.6E+02	8.4E+02	1.2E+03	J	mg/kg	8.4E+02	95% UCL		8.4E+02	95% UCL	
Cyanide	mg/kg	5.3E-01	1.1E+01	2.5E+00		mg/kg	2.5E+00	Max	(2)	5.3E-01	Mean	(3)
Manganese	mg/kg	1.1E+03	2.0E+03	2.9E+03		mg/kg	2.0E+03	95% UCL		2.0E+03	95% UCL	
Mercury	mg/kg	4.9E-01	6.3E+00	1.5E+00		mg/kg	1.5E+00	Max	(2)	4.9E-01	Mean	(3)
Thallium	mg/kg	1.2E+00	1.8E+00	2.1E+00	J	mg/kg	1.8E+00	95% UCL		1.8E+00	95% UCL	

(1) Only COPCs selected on Table 2.3 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.4
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 2

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Acetophenone	mg/kg	1.7E-01	2.1E-01	7.7E-02	J	mg/kg	7.7E-02	Max	(2)	7.7E-02	Max	(4)
Dioxin TEQ	mg/kg	1.0E-04	1.6E-04	2.8E-04	J	mg/kg	1.6E-04	95% UCL		1.6E-04	95% UCL	
Arsenic	mg/kg	3.6E+00	4.4E+00	5.7E+00		mg/kg	4.4E+00	95% UCL		4.4E+00	95% UCL	
Cadmium	mg/kg	2.1E+00	2.2E+00	1.1E+01		mg/kg	2.2E+00	95% UCL		2.2E+00	95% UCL	
Chromium	mg/kg	5.2E+02	5.6E+02	2.7E+03		mg/kg	5.6E+02	95% UCL		5.6E+02	95% UCL	
Cyanide	mg/kg	4.0E-01	1.8E+00	2.5E+00		mg/kg	1.8E+00	95% UCL		1.8E+00	95% UCL	
Manganese	mg/kg	9.1E+02	1.7E+03	2.9E+03		mg/kg	1.7E+03	95% UCL		1.7E+03	95% UCL	
Mercury	mg/kg	4.6E-01	3.8E-01	2.2E+00		mg/kg	3.8E-01	95% UCL		3.8E-01	95% UCL	
Thallium	mg/kg	1.4E+00	1.8E+00	2.6E+00		mg/kg	1.8E+00	95% UCL		1.8E+00	95% UCL	

(1) Only COPCs selected on Table 2.4 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were normal: Dioxin TEQ, arsenic, cyanide, manganese, and thallium. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.5
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 3

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	mg/kg	2.6E-05	6.3E-02	1.1E-04	J	mg/kg	1.1E-04	Max	(2)	2.6E-05	Mean	(4)
Arsenic	mg/kg	6.3E+00	1.2E+01	9.4E+00	J	mg/kg	9.4E+00	Max	(2)	6.3E+00	Mean	(4)
Chromium	mg/kg	1.2E+02	1.3E+03	2.5E+02	J	mg/kg	2.5E+02	Max	(2)	1.2E+02	Mean	(4)
Manganese	mg/kg	7.0E+02	9.5E+02	8.8E+02		mg/kg	8.8E+02	Max	(2)	7.0E+02	Mean	(4)
Mercury	mg/kg	1.0E+00	4.4E+00	4.4E+00		mg/kg	4.4E+00	Max	(2)	1.0E+00	Mean	(4)

(1) Only COPCs selected on Table 2.5 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for mercury were non-normal. Non-parametric methods were used to calculate the 95% UCL for this COPC.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.6
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 3

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	mg/kg	2.4E-04	1.0E-01	2.6E-03		mg/kg	2.6E-03	Max	(2)	2.4E-04	Mean	(4)
Antimony	mg/kg	5.8E+00	3.0E+00	3.6E+01		mg/kg	3.0E+00	95% UCL		3.0E+00	95% UCL	
Arsenic	mg/kg	5.6E+00	8.3E+00	9.4E+00		mg/kg	8.3E+00	95% UCL		8.3E+00	95% UCL	
Cadmium	mg/kg	1.3E+01	4.2E+01	5.1E+01		mg/kg	4.2E+01	95% UCL		4.2E+01	95% UCL	
Chromium	mg/kg	4.9E+03	9.6E+05	1.8E+04		mg/kg	1.8E+04	Max	(2)	4.9E+03	Mean	(4)
Lead	mg/kg	2.0E+02	5.7E+02	7.7E+02		mg/kg	5.7E+02	95% UCL		5.7E+02	95% UCL	
Manganese	mg/kg	1.1E+03	1.7E+03	3.8E+03	J	mg/kg	1.7E+03	95% UCL		1.7E+03	95% UCL	
Mercury	mg/kg	4.3E+00	1.1E+01	1.6E+01		mg/kg	1.1E+01	95% UCL		1.1E+01	95% UCL	
Thallium	mg/kg	1.1E+00	6.0E-01	4.3E+00		mg/kg	6.0E-01	95% UCL		6.0E-01	95% UCL	

(1) Only COPCs selected on Table 2.6 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were normal: Dioxin TEQ, arsenic, chromium, and manganese. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.7
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	mg/kg	4.3E-01	2.2E-01	3.4E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Benzo(a)pyrene	mg/kg	4.2E-01	2.2E-01	3.2E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Benzo(b)fluoranthene	mg/kg	3.8E-01	2.2E-01	2.4E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Dibenz(a,h)anthracene	mg/kg	3.2E-01	2.2E-01	6.2E-01	J	mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Indeno(1,2,3-cd)pyrene	mg/kg	3.5E-01	2.2E-01	1.7E+00	J	mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Dioxin TEQ	mg/kg	1.8E-04	2.8E-03	7.7E-04	J	mg/kg	7.7E-04	Max	(2)	1.8E-04	Mean	(4)
Arsenic	mg/kg	3.4E+00	4.0E+00	6.5E+00		mg/kg	4.0E+00	95% UCL		4.0E+00	95% UCL	
Cadmium	mg/kg	3.1E+00	1.8E+01	3.8E+01		mg/kg	1.8E+01	95% UCL		1.8E+01	95% UCL	
Chromium	mg/kg	1.1E+03	4.6E+03	1.2E+04	J	mg/kg	4.6E+03	95% UCL		4.6E+03	95% UCL	
Lead	mg/kg	5.8E+01	3.7E+01	4.7E+02		mg/kg	3.7E+01	95% UCL		3.7E+01	95% UCL	
Manganese	mg/kg	5.5E+02	6.9E+02	2.4E+03		mg/kg	6.9E+02	95% UCL		6.9E+02	95% UCL	
Mercury	mg/kg	8.4E-01	2.0E+00	9.3E+00		mg/kg	2.0E+00	95% UCL		2.0E+00	95% UCL	
Thallium	mg/kg	3.2E+00	5.8E+00	1.6E+01		mg/kg	5.8E+00	95% UCL		5.8E+00	95% UCL	

(1) Only COPCs selected on Table 2.7 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were normal: Dioxin TEQ, arsenic, cadmium, chromium, manganese, mercury, and thallium. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.8
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	mg/kg	4.4E-01	2.2E-01	3.4E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Benzo(a)pyrene	mg/kg	4.3E-01	2.2E-01	3.2E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Benzo(b)fluoranthene	mg/kg	4.0E-01	2.2E-01	2.4E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Dibenz(a,h)anthracene	mg/kg	3.6E-01	2.2E-01	6.2E-01	J	mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Indeno(1,2,3-cd)pyrene	mg/kg	3.8E-01	2.2E-01	1.7E+00	J	mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Naphthalene	mg/kg	6.6E-01	2.2E-01	1.1E+01		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Pentachlorophenol	mg/kg	8.2E-01	5.5E-01	3.8E+00	J	mg/kg	5.5E-01	95% UCL		5.5E-01	95% UCL	
Dioxin TEQ	mg/kg	1.4E-04	2.3E+00	7.7E-04	J	mg/kg	7.7E-04	Max	(2)	1.4E-04	Mean	(4)
Arsenic	mg/kg	3.7E+00	4.6E+00	6.5E+00		mg/kg	4.6E+00	95% UCL		4.6E+00	95% UCL	
Cadmium	mg/kg	3.5E+00	2.3E-01	4.5E+01		mg/kg	2.3E-01	95% UCL		2.3E-01	95% UCL	
Chromium	mg/kg	1.2E+03	7.6E+01	1.7E+04		mg/kg	7.6E+01	95% UCL		7.6E+01	95% UCL	
Lead	mg/kg	5.9E+01	2.1E+01	6.9E+02		mg/kg	2.1E+01	95% UCL		2.1E+01	95% UCL	
Manganese	mg/kg	5.9E+02	5.1E+02	2.5E+03	J	mg/kg	5.1E+02	95% UCL		5.1E+02	95% UCL	
Mercury	mg/kg	8.7E-01	2.2E-01	1.0E+01		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Thallium	mg/kg	3.2E+00	2.1E+00	1.6E+01		mg/kg	2.1E+00	95% UCL		2.1E+00	95% UCL	

(1) Only COPCs selected on Table 2.8 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPC were normal: Dioxin TEQ. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.9
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoon 5

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)pyrene	mg/kg	3.4E-01	1.7E+02	6.4E-02	J	mg/kg	6.4E-02	Max	(2)	6.4E-02	Max	(5)
Pentachlorophenol	mg/kg	2.0E+00	6.3E+00	6.3E+00		mg/kg	6.3E+00	Max	(2)	2.0E+00	Mean	(4)
Dioxin TEQ	mg/kg	1.1E-03	2.7E-02	2.3E-03	J	mg/kg	2.3E-03	Max	(2)	1.1E-03	Mean	(4)
Antimony	mg/kg	4.2E+00	1.5E+01	1.5E+01		mg/kg	1.5E+01	Max	(2)	4.2E+00	Mean	(4)
Arsenic	mg/kg	1.8E+00	N/A	3.2E+00		mg/kg	3.2E+00	Max	(2)	1.8E+00	Mean	(4)
Cadmium	mg/kg	9.1E+00	3.2E+26	3.5E+01	J	mg/kg	3.5E+01	Max	(2)	9.1E+00	Mean	(4)
Chromium	mg/kg	4.2E+03	1.6E+34	1.6E+04		mg/kg	1.6E+04	Max	(2)	4.2E+03	Mean	(4)
Lead	mg/kg	1.7E+02	3.5E+11	6.2E+02		mg/kg	6.2E+02	Max	(2)	1.7E+02	Mean	(4)
Manganese	mg/kg	9.4E+02	1.2E+06	2.6E+03		mg/kg	2.6E+03	Max	(2)	9.4E+02	Mean	(4)
Thallium	mg/kg	8.6E+00	2.4E+09	1.7E+01		mg/kg	1.7E+01	Max	(2)	8.6E+00	Mean	(4)

(1) Only COPCs selected on Table 2.9 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were non-normal: pentachlorophenol and antimony. Non-parametric methods were used to calculate the 95% UCL for these COPCs. There were only two results for arsenic, so a 95% UCL was not calculated.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(5) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.10
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoon 5

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)pyrene	mg/kg	2.2E-01	3.4E-01	3.1E-01	J	mg/kg	3.1E-01	Max	(2)	2.2E-01	Mean	(4)
bis(2-Chloroethoxy)metha	mg/kg	3.3E-01	6.2E-01	1.0E+00	J	mg/kg	6.2E-01	95% UCL		6.2E-01	95% UCL	
Bis(2-chloroethyl)ether	mg/kg	2.8E-01	4.7E-01	3.2E-01	J	mg/kg	3.2E-01	Max	(2)	2.8E-01	Mean	(4)
N-Nitroso-di-n-propylamin	mg/kg	2.9E-01	5.1E-01	4.9E-01	J	mg/kg	4.9E-01	Max	(2)	2.9E-01	Mean	(4)
Nitrobenzene	mg/kg	4.9E-01	2.3E-01	3.3E+00	J	mg/kg	2.3E-01	95% UCL		2.3E-01	95% UCL	
Pentachlorophenol	mg/kg	1.3E+00	6.1E-01	6.3E+00		mg/kg	6.1E-01	95% UCL		6.1E-01	95% UCL	
Aroclor 1248	mg/kg	7.0E-02	6.0E-02	4.5E-01		mg/kg	6.0E-02	95% UCL		6.0E-02	95% UCL	
Dioxin TEQ	mg/kg	1.5E-03	1.9E-03	3.4E-03	J	mg/kg	1.9E-03	95% UCL		1.9E-03	95% UCL	
Antimony	mg/kg	2.2E+00	8.0E+00	1.5E+01		mg/kg	8.0E+00	95% UCL		8.0E+00	95% UCL	
Arsenic	mg/kg	2.3E+00	5.2E+00	5.0E+00		mg/kg	5.0E+00	Max	(2)	2.3E+00	Mean	(4)
Cadmium	mg/kg	6.7E+00	1.0E+01	3.5E+01	J	mg/kg	1.0E+01	95% UCL		1.0E+01	95% UCL	
Chromium	mg/kg	4.2E+03	8.1E+03	1.6E+04		mg/kg	8.1E+03	95% UCL		8.1E+03	95% UCL	
Lead	mg/kg	1.6E+02	1.3E+03	6.2E+02		mg/kg	6.2E+02	Max	(2)	1.6E+02	Mean	(4)
Manganese	mg/kg	7.0E+02	1.1E+03	2.6E+03		mg/kg	1.1E+03	95% UCL		1.1E+03	95% UCL	
Mercury	mg/kg	1.5E+00	3.0E+01	4.7E+00		mg/kg	4.7E+00	Max	(2)	1.5E+00	Mean	(4)
Thallium	mg/kg	4.9E+00	1.3E+01	1.7E+01		mg/kg	1.3E+01	95% UCL		1.3E+01	95% UCL	

(1) Only COPCs selected on Table 2.10 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were non-normal: nitrobenzene, pentachlorophenol, aroclor 1248, cadmium, chromium, and thallium. Non-parametric methods were used to calculate the 95% UCL for these COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.11
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoon 1

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	N/A	N/A	2.4E+00	J	ug/L	2.4E+00	Max	(2)	2.4E+00	Max	(2)
Manganese	ug/L	N/A	N/A	1.0E+03	J	ug/L	1.0E+03	Max	(2)	1.0E+03	Max	(2)
Mercury	ug/L	N/A	N/A	3.5E-01	J	ug/L	3.5E-01	Max	(2)	3.5E-01	Max	(2)
Thallium	ug/L	N/A	N/A	1.6E+00	J	ug/L	1.6E+00	Max	(2)	1.6E+00	Max	(2)

(1) Only COPCs selected on Table 2.11 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.12
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoon 2

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	ug/L	N/A	N/A	5.0E-07	J	ug/L	5.0E-07	Max	(2)	5.0E-07	Max	(2)
Manganese	ug/L	N/A	N/A	7.4E+02	J	ug/L	7.4E+02	Max	(2)	7.4E+02	Max	(2)

(1) Only COPCs selected on Table 2.12 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.13
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoon 4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	ug/L	N/A	N/A	4.3E-08	J	ug/L	4.3E-08	Max	(2)	4.3E-08	Max	(2)
Manganese	ug/L	4.7E+02	1.9E+09	1.1E+03	J	ug/L	1.1E+03	Max	(2)	4.7E+02	Mean	(4)
Mercury	ug/L	1.0E-01	2.0E-01	2.0E-01	J	ug/L	2.0E-01	Max	(2)	1.0E-01	Mean	(4)

(1) Only COPCs selected on Table 2.13 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for mercury were non-normal. Non-parametric methods were used to calculate the 95% UCL for this COPC.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.14
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoon 5

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	ug/L	N/A	N/A	4.2E-07	J	ug/L	4.2E-07	Max	(2)	4.2E-07	Max	(2)
Chromium	ug/L	N/A	N/A	1.2E+01	J	ug/L	1.2E+01	Max	(2)	1.2E+01	Max	(2)
Manganese	ug/L	N/A	N/A	2.6E+02	J	ug/L	2.6E+02	Max	(2)	2.6E+02	Max	(2)
Mercury	ug/L	N/A	N/A	2.1E-01	J	ug/L	2.1E-01	Max	(2)	2.1E-01	Max	(2)

(1) Only COPCs selected on Table 2.14 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.15
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil
Exposure Point: Warehouse Area

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	mg/kg	2.5E-01	1.1E+00	7.1E-01		mg/kg	7.1E-01	Max	(2)	2.5E-01	Mean	(4)
Benzo(a)pyrene	mg/kg	2.4E-01	1.1E+00	6.5E-01		mg/kg	6.5E-01	Max	(2)	2.4E-01	Mean	(4)
Benzo(b)fluoranthene	mg/kg	2.6E-01	9.5E-01	6.7E-01		mg/kg	6.7E-01	Max	(2)	2.6E-01	Mean	(4)
Dibenz(a,h)anthracene	mg/kg	6.7E-02	1.2E-01	7.4E-02	J	mg/kg	7.4E-02	Max	(2)	6.7E-02	Mean	(4)
Dioxin TEQ	mg/kg	9.4E-06	1.0E-05	9.6E-06	J	mg/kg	9.6E-06	Max	(2)	9.4E-06	Mean	(4)
Arsenic	mg/kg	4.6E+00	6.1E+00	8.6E+00		mg/kg	6.1E+00	95% UCL		6.1E+00	95% UCL	
Chromium	mg/kg	4.2E+01	8.0E+01	1.2E+02		mg/kg	8.0E+01	95% UCL		8.0E+01	95% UCL	
Manganese	mg/kg	5.9E+02	1.1E+03	1.1E+03		mg/kg	1.1E+03	95% UCL		1.1E+03	95% UCL	

(1) Only COPCs selected on Table 2.15 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for manganese were non-normal. Non-parametric methods were used to calculate the 95% UCL for this COPC.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.16
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Acetophenone	mg/kg	1.4E-01	1.9E-01	9.8E-02	J	mg/kg	9.8E-02	Max	(2)	9.8E-02	Max	(5)
Benzo(a)anthracene	mg/kg	3.1E-01	2.2E-01	1.9E+00		mg/kg	2.2E-01	95% UCL		2.2E-01	95% UCL	
Benzo(a)pyrene	mg/kg	3.1E-01	2.6E-01	2.2E+00		mg/kg	2.6E-01	95% UCL		2.6E-01	95% UCL	
Benzo(b)fluoranthene	mg/kg	3.4E-01	5.8E-01	2.5E+00		mg/kg	5.8E-01	95% UCL		5.8E-01	95% UCL	
Dibenz(a,h)anthracene	mg/kg	1.4E-01	1.8E-01	5.1E-01	J	mg/kg	1.8E-01	95% UCL		1.8E-01	95% UCL	
Indeno(1,2,3-cd)pyrene	mg/kg	2.0E-01	1.9E-01	1.3E+00		mg/kg	1.9E-01	95% UCL		1.9E-01	95% UCL	
Dioxin TEQ	mg/kg	9.4E-06	1.0E-05	9.6E-06	J	mg/kg	9.6E-06	Max	(2)	9.4E-06	Mean	(4)
Arsenic	mg/kg	6.0E+00	7.0E+00	1.7E+01		mg/kg	7.0E+00	95% UCL		7.0E+00	95% UCL	
Chromium	mg/kg	2.4E+01	3.2E+01	1.2E+02		mg/kg	3.2E+01	95% UCL		3.2E+01	95% UCL	
Manganese	mg/kg	5.9E+02	6.8E+02	1.2E+03		mg/kg	6.6E+02	95% UCL		6.8E+02	95% UCL	
Mercury	mg/kg	1.8E-01	1.1E-01	2.0E+00	J	mg/kg	1.1E-01	95% UCL		1.1E-01	95% UCL	
Thallium	mg/kg	3.6E+00	6.0E+00	1.4E+01		mg/kg	6.0E+00	95% UCL		6.0E+00	95% UCL	
Vanadium	mg/kg	2.5E+01	1.3E+01	3.2E+02		mg/kg	1.3E+01	95% UCL		1.3E+01	95% UCL	

(1) Only COPCs selected on Table 2.16 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were normal: benzo(b)fluoranthene, dioxin TEQ, arsenic, chromium, and manganese. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(5) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.17
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: River and Wetlands

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	ug/L	4.6E-07	1.5E+06	1.8E-06	J	ug/L	1.8E-06	Max	(2)	4.6E-07	Mean	(4)
Manganese	ug/L	1.2E+02	7.0E+02	5.3E+02	J	ug/L	5.3E+02	Max	(2)	1.2E+02	Mean	(4)
Mercury	ug/L	1.3E-01	5.0E-02	9.6E-01	J	ug/L	5.0E-02	95% UCL		5.0E-02	95% UCL	

(1) Only COPCs selected on Table 2.17 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for mercury were non-normal. Non-parametric methods were used to calculate the 95% UCL for this COPC.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.18
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: River and Wetlands

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data (3)	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	mg/kg	4.2E-01	5.2E-01	5.4E+00	J	mg/kg	5.2E-01	95% UCL		5.2E-01	95% UCL	
Benzo(a)pyrene	mg/kg	4.4E-01	2.5E-01	6.5E+00		mg/kg	2.5E-01	95% UCL		2.5E-01	95% UCL	
Benzo(b)fluoranthene	mg/kg	3.6E-01	4.5E-01	3.8E+00	J	mg/kg	4.5E-01	95% UCL		4.5E-01	95% UCL	
Dibenz(a,h)anthracene	mg/kg	1.6E-01	2.1E-01	8.6E-01	J	mg/kg	2.1E-01	95% UCL		2.1E-01	95% UCL	
Indeno(1,2,3-cd)pyrene	mg/kg	2.4E-01	2.3E-01	2.5E+00	J	mg/kg	2.3E-01	95% UCL		2.3E-01	95% UCL	
Phenanthrene	mg/kg	6.2E-01	7.5E-01	1.0E+01		mg/kg	7.5E-01	95% UCL		7.5E-01	95% UCL	
Aroclor 1254	mg/kg	9.6E-02	6.6E-02	8.4E-01		mg/kg	6.6E-02	95% UCL		6.6E-02	95% UCL	
Aroclor 1260	mg/kg	4.8E-02	3.5E-02	2.7E-01		mg/kg	3.5E-02	95% UCL		3.5E-02	95% UCL	
PCB TEQ	mg/kg	8.1E-03	5.0E-03	4.1E-02		mg/kg	5.0E-03	95% UCL		5.0E-03	95% UCL	
Dioxin TEQ	mg/kg	8.9E-06	7.4E-05	7.3E-05	J	mg/kg	7.3E-05	Max	(2)	8.9E-06	Mean	(4)
Arsenic	mg/kg	3.5E+00	5.3E+00	1.4E+01		mg/kg	5.3E+00	95% UCL		5.3E+00	95% UCL	
Chromium	mg/kg	3.2E+01	2.3E+01	1.1E+02	J	mg/kg	2.3E+01	95% UCL		2.3E+01	95% UCL	
Manganese	mg/kg	6.2E+02	5.8E+02	2.8E+03	J	mg/kg	5.8E+02	95% UCL		5.8E+02	95% UCL	
Mercury	mg/kg	2.9E-01	4.9E-01	2.3E+00	J	mg/kg	4.9E-01	95% UCL		4.9E-01	95% UCL	

(1) Only COPCs selected on Table 2.18 appear.
(2) Because the 95% UCL exceeds the maximum detected concentration, the maximum detected concentration is used as the RME EPC.
(3) Data for the following COPCs were normal: benzo(a)anthracene, benzo(b)fluoranthene, dibenz(a,h)anthracene, phenanthrene, dioxin TEQ, arsenic and mercury. Non-parametric methods were used to calculate the 95% UCL for all other COPCs.
(4) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.19
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-001)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	ug/L	9.1E-01	N/A	1.6E+00	J	ug/L	1.6E+00	Max	(2)	9.1E-01	Mean	(3)

(1) Only COPCs selected on Table 2.19 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.20
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-002)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	2.2E+00	N/A	3.0E+00		ug/L	3.0E+00	Max	(2)	2.2E+00	Mean	(3)

(1) Only COPCs selected on Table 2.20 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.21
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-003)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Bis(2-ethylhexyl)phthalate	ug/L	6.5E+00	N/A	1.2E+01		ug/L	1.2E+01	Max	(2)	6.5E+00	Mean	(3)
Antimony	ug/L	1.3E+00	N/A	2.0E+00	J	ug/L	2.0E+00	Max	(2)	1.3E+00	Mean	(3)
Arsenic	ug/L	4.9E+00	N/A	5.0E+00	J	ug/L	5.0E+00	Max	(2)	4.9E+00	Mean	(3)
Manganese	ug/L	2.1E+02	N/A	2.3E+02		ug/L	2.3E+02	Max	(2)	2.1E+02	Mean	(3)

(1) Only COPCs selected on Table 2.21 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.22
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-004)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Manganese	ug/L	2.1E+02	N/A	2.4E+02		ug/L	2.4E+02	Max	(2)	2.1E+02	Mean	(3)

(1) Only COPCs selected on Table 2.22 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.23
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-006)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methyl tert-butyl ether	ug/L	2.5E+00	N/A	4.4E+00		ug/L	4.4E+00	Max	(2)	2.5E+00	Mean	(4)
Bis(2-ethylhexyl)phthalate	ug/L	1.9E+01	N/A	3.6E+01		ug/L	3.6E+01	Max	(2)	1.9E+01	Mean	(3)
Thallium	ug/L	1.4E+00	N/A	1.4E+00	J	ug/L	1.4E+00	Max	(2)	1.4E+00	Max	(4)

(1) Only COPCs selected on Table 2.24 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.24
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-007)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	ug/L	1.2E+00	N/A	1.9E+00	J	ug/L	1.9E+00	Max	(2)	1.2E+00	Mean	(3)
Arsenic	ug/L	4.2E-01	N/A	4.9E-01	J	ug/L	4.9E-01	Max	(2)	4.2E-01	Mean	(3)

(1) Only COPCs selected on Table 2.25 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.25
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-008)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	2.5E+00	N/A	3.1E+00		ug/L	3.1E+00	Max	(2)	2.5E+00	Mean	(3)
Manganese	ug/L	3.4E+02	N/A	5.0E+02		ug/L	5.0E+02	Max	(2)	3.4E+02	Mean	(3)

(1) Only COPCs selected on Table 2.26 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.26
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Well - RW-010)

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	N/A	N/A	1.6E+00	J	ug/L	1.6E+00	Max	(2)	1.6E+00	Max	(2)
Manganese	ug/L	N/A	N/A	6.6E+02		ug/L	6.6E+02	Max	(2)	6.6E+02	Max	(2)

(1) Only COPCs selected on Table 2.28 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.27
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-101U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	9.8E+00	N/A	2.6E+01		ug/L	2.6E+01	Max	(2)	9.8E+00	Mean	(3)
Antimony	ug/L	8.5E-01	N/A	1.7E+00	J	ug/L	1.7E+00	Max	(2)	8.5E-01	Mean	(3)
Arsenic	ug/L	6.1E-01	N/A	1.5E+00	J	ug/L	1.5E+00	Max	(2)	6.1E-01	Mean	(3)
Chromium	ug/L	4.3E+00	N/A	1.1E+01		ug/L	1.1E+01	Max	(2)	4.3E+00	Mean	(3)
Manganese	ug/L	8.6E+01	N/A	2.1E+02		ug/L	2.1E+02	Max	(2)	8.6E+01	Mean	(3)
Thallium	ug/L	7.6E-01	N/A	8.5E-01	J	ug/L	8.5E-01	Max	(2)	7.6E-01	Mean	(3)

(1) Only COPCs selected on Table 2.29 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.28
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-102U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	2.9E-01	N/A	2.6E-01	J	ug/L	2.6E-01	Max	(2)	2.6E-01	Max	(3)

(1) Only COPCs selected on Table 2.30 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.29
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-103R

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	ug/L	1.2E+00	N/A	2.1E+00	J	ug/L	2.1E+00	Max	(2)	1.2E+00	Mean	(3)
Arsenic	ug/L	1.5E+00	N/A	1.9E+00	J	ug/L	1.9E+00	Max	(2)	1.5E+00	Mean	(3)
Manganese	ug/L	1.0E+02	N/A	1.3E+02		ug/L	1.3E+02	Max	(2)	1.0E+02	Mean	(3)

(1) Only COPCs selected on Table 2.31 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.30
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-103U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	4.9E-01	N/A	8.1E-01	J	ug/L	8.1E-01	Max	(2)	4.9E-01	Mean	(3)

(1) Only COPCs selected on Table 2.32 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.31
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-104U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	2.0E+00	N/A	2.2E+00	J	ug/L	2.2E+00	Max	(2)	2.0E+00	Mean	(3)
Manganese	ug/L	7.4E+02	N/A	1.1E+03	J	ug/L	1.1E+03	Max	(2)	7.4E+02	Mean	(3)

(1) Only COPCs selected on Table 2.33 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.32
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-106U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	9.4E-01	N/A	1.8E+00	J	ug/L	1.8E+00	Max	(2)	9.4E-01	Mean	(3)
Manganese	ug/L	1.7E+02	N/A	4.4E+02		ug/L	4.4E+02	Max	(2)	1.7E+02	Mean	(3)

(1) Only COPCs selected on Table 2.34 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.33
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-107R

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Dioxin TEQ	ug/L	N/A	N/A	3.4E-06	J	ug/L	3.4E-06	Max	(2)	3.4E-06	Max	(2)
Arsenic	ug/L	6.2E+00	N/A	8.9E+00	J	ug/L	8.9E+00	Max	(2)	6.2E+00	Mean	(3)
Manganese	ug/L	1.1E+03	N/A	1.6E+03		ug/L	1.6E+03	Max	(2)	1.1E+03	Mean	(3)

(1) Only COPCs selected on Table 2.35 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.34
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-107U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	ug/L	8.0E-01	N/A	1.6E+00	J	ug/L	1.6E+00	Max	(2)	8.0E-01	Mean	(3)
Arsenic	ug/L	3.1E+00	N/A	3.6E+00		ug/L	3.6E+00	Max	(2)	3.1E+00	Mean	(3)
Manganese	ug/L	2.7E+03	N/A	3.6E+03	J	ug/L	3.6E+03	Max	(2)	2.7E+03	Mean	(3)

(1) Only COPCs selected on Table 2.36 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.35
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-109U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Carbon tetrachloride	ug/L	6.7E-01	N/A	1.0E+00	J	ug/L	1.0E+00	Max	(2)	6.7E-01	Mean	(3)
Heptachlor epoxide	ug/L	N/A	N/A	1.3E-02	J	ug/L	1.3E-02	Max	(2)	1.3E-02	Max	(2)
Arsenic	ug/L	1.8E+01	N/A	2.3E+01		ug/L	2.3E+01	Max	(2)	1.8E+01	Mean	(3)
Manganese	ug/L	3.9E+03	N/A	4.2E+03		ug/L	4.2E+03	Max	(2)	3.9E+03	Mean	(3)
Thallium	ug/L	2.7E+00	N/A	7.5E+00		ug/L	7.5E+00	Max	(2)	2.7E+00	Mean	(3)

(1) Only COPCs selected on Table 2.37 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.36
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-110R

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	4.9E+00	N/A	5.4E+00		ug/L	5.4E+00	Max	(2)	4.9E+00	Mean	(3)
Manganese	ug/L	1.6E+03	N/A	1.8E+03	J	ug/L	1.8E+03	Max	(2)	1.6E+03	Mean	(3)

(1) Only COPCs selected on Table 2.38 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.37
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-110U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	6.8E+00	N/A	1.5E+01		ug/L	1.5E+01	Max	(2)	6.8E+00	Mean	(3)
Pentachlorophenol	ug/L	2.8E+00	N/A	1.0E+00	J	ug/L	1.0E+00	Max	(2)	1.0E+00	Max	(4)
Antimony	ug/L	1.3E+00	N/A	1.6E+00	J	ug/L	1.6E+00	Max	(2)	1.3E+00	Mean	(3)
Arsenic	ug/L	1.5E+00	N/A	2.4E+00		ug/L	2.4E+00	Max	(2)	1.5E+00	Mean	(3)
Manganese	ug/L	9.6E+02	N/A	1.5E+03	J	ug/L	1.5E+03	Max	(2)	9.6E+02	Mean	(3)

(1) Only COPCs selected on Table 2.39 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.38
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-111U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	ug/L	8.8E-01	N/A	2.0E+00	J	ug/L	2.0E+00	Max	(2)	8.8E-01	Mean	(3)
Arsenic	ug/L	6.6E-01	N/A	6.5E-01	J	ug/L	6.5E-01	Max	(2)	6.5E-01	Max	(4)
Manganese	ug/L	4.4E+02	N/A	6.9E+02		ug/L	6.9E+02	Max	(2)	4.4E+02	Mean	(3)

(1) Only COPCs selected on Table 2.40 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.39
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-112U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	ug/L	2.0E+00	N/A	3.3E+00	J	ug/L	3.3E+00	Max	(2)	2.0E+00	Mean	(3)
Arsenic	ug/L	6.8E-01	N/A	9.8E-01	J	ug/L	9.8E-01	Max	(2)	6.8E-01	Mean	(3)

(1) Only COPCs selected on Table 2.41 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.40
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-113R

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	N/A	N/A	5.8E+01		ug/L	5.8E+01	Max	(2)	5.8E+01	Max	(2)
Manganese	ug/L	N/A	N/A	1.3E+03	J	ug/L	1.3E+03	Max	(2)	1.3E+03	Max	(2)

(1) Only COPCs selected on Table 2.42 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.41
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-114U

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
1,3-Dichlorobenzene	ug/L	N/A	N/A	6.9E-01	J	ug/L	6.9E-01	Max	(2)	6.9E-01	Max	(2)
1,4-Dichlorobenzene	ug/L	N/A	N/A	7.9E+00	J	ug/L	7.9E+00	Max	(2)	7.9E+00	Max	(2)
Chlorobenzene	ug/L	N/A	N/A	3.6E+01	J	ug/L	3.6E+01	Max	(2)	3.6E+01	Max	(2)
Tetrachloroethylene	ug/L	N/A	N/A	7.8E+01	J	ug/L	7.8E+01	Max	(2)	7.8E+01	Max	(2)
Arsenic	ug/L	N/A	N/A	2.4E+00		ug/L	2.4E+00	Max	(2)	2.4E+00	Max	(2)
Chromium	ug/L	N/A	N/A	1.3E+01		ug/L	1.3E+01	Max	(2)	1.3E+01	Max	(2)
Manganese	ug/L	N/A	N/A	9.8E+03	J	ug/L	9.8E+03	Max	(2)	9.8E+03	Max	(2)

(1) Only COPCs selected on Table 2.43 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.42
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-B-7

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	6.3E+03	N/A	1.9E+04		ug/L	1.9E+04	Max	(2)	6.3E+03	Mean	(3)

(1) Only COPCs selected on Table 2.44 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.43
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-3

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
1,4-Dichlorobenzene	ug/L	5.2E-01	N/A	5.6E-01	J	ug/L	5.6E-01	Max	(2)	5.2E-01	Mean	(3)
Hexavalent Chromium	ug/L	N/A	N/A	2.9E+01		ug/L	2.9E+01	Max	(2)	2.9E+01	Max	(2)
Arsenic	ug/L	1.3E+01	N/A	1.8E+01		ug/L	1.8E+01	Max	(2)	1.3E+01	Mean	(3)
Manganese	ug/L	7.9E+03	N/A	9.8E+03	J	ug/L	9.8E+03	Max	(2)	7.9E+03	Mean	(3)

(1) Only COPCs selected on Table 2.45 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.44
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-4

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	2.0E+02	N/A	5.9E+02		ug/L	5.9E+02	Max	(2)	2.0E+02	Mean	(3)

(1) Only COPCs selected on Table 2.46 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.45
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-5

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	ug/L	4.3E-01	N/A	6.3E-01	J	ug/L	6.3E-01	Max	(2)	4.3E-01	Mean	(3)
Thallium	ug/L	4.9E-01	N/A	8.0E-01	J	ug/L	8.0E-01	Max	(2)	4.9E-01	Mean	(3)

(1) Only COPCs selected on Table 2.47 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.46
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-7

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	2.8E+00	N/A	5.4E+00		ug/L	5.4E+00	Max	(2)	2.8E+00	Mean	(3)
Arsenic	ug/L	7.6E-01	N/A	8.6E-01	J	ug/L	8.6E-01	Max	(2)	7.6E-01	Mean	(3)
Manganese	ug/L	4.4E+01	N/A	8.9E+01		ug/L	8.9E+01	Max	(2)	4.4E+01	Mean	(3)

(1) Only COPCs selected on Table 2.49 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.47
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-9

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	4.3E+00	N/A	1.0E+01		ug/L	1.0E+01	Max	(2)	4.3E+00	Mean	(3)
Cyanide	ug/L	2.4E+00	N/A	2.2E+00	J	ug/L	2.2E+00	Max	(2)	2.2E+00	Max	(4)

(1) Only COPCs selected on Table 2.50 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.48
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-10

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Methylene chloride	ug/L	4.1E+00	N/A	9.3E+00	J	ug/L	9.3E+00	Max	(2)	4.1E+00	Mean	(3)
Arsenic	ug/L	9.1E-01	N/A	8.6E-01	J	ug/L	8.6E-01	Max	(2)	8.6E-01	Max	(4)
Manganese	ug/L	1.7E+03	N/A	2.9E+03	J	ug/L	2.9E+03	Max	(2)	1.7E+03	Mean	(3)

(1) Only COPCs selected on Table 2.51 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
J = Estimated Concentration
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.49
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site Monitoring Well - MW-L-11

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Atrazine	ug/L	3.5E+00	N/A	7.0E+00		ug/L	7.0E+00	Max	(2)	3.5E+00	Mean	(3)

(1) Only COPCs selected on Table 2.52 appear.
(2) Due to the small sample size, the maximum detected concentration is used.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.50
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: All On-Site Monitoring Wells

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
1,3-Dichlorobenzene	ug/L	5.0E-01	N/A	6.9E-01	J	ug/L	6.9E-01	Max	(2)	5.0E-01	Mean	(3)
1,4-Dichlorobenzene	ug/L	6.1E-01	N/A	7.9E+00	J	ug/L	7.9E+00	Max	(2)	6.1E-01	Mean	(3)
Carbon tetrachloride	ug/L	5.1E-01	N/A	1.0E+00	J	ug/L	1.0E+00	Max	(2)	5.1E-01	Mean	(3)
Chlorobenzene	ug/L	1.0E+00	N/A	3.6E+01	J	ug/L	3.6E+01	Max	(2)	1.0E+00	Mean	(3)
Methylene chloride	ug/L	2.9E+02	N/A	1.9E+04		ug/L	1.9E+04	Max	(2)	2.9E+02	Mean	(3)
Tetrachloroethylene	ug/L	1.6E+00	N/A	7.8E+01	J	ug/L	7.8E+01	Max	(2)	1.6E+00	Mean	(3)
Atrazine	ug/L	1.6E+00	N/A	7.0E+00		ug/L	7.0E+00	Max	(2)	1.6E+00	Mean	(3)
Pentachlorophenol	ug/L	3.8E+00	N/A	1.0E+00	J	ug/L	1.0E+00	Max	(2)	1.0E+00	Max	(4)
Heptachlor epoxide	ug/L	5.4E-03	N/A	1.3E-02	J	ug/L	1.3E-02	Max	(2)	5.4E-03	Mean	(3)
Dioxin TEQ	ug/L	1.0E-07	N/A	3.4E-06	J	ug/L	3.4E-06	Max	(2)	1.0E-07	Mean	(3)
Hexavalent Chromium	ug/L	6.4E+00	N/A	2.9E+01		ug/L	2.9E+01	Max	(2)	6.4E+00	Mean	(3)
Antimony	ug/L	7.4E-01	N/A	3.3E+00	J	ug/L	3.3E+00	Max	(2)	7.4E-01	Mean	(3)
Arsenic	ug/L	3.4E+00	N/A	5.8E+01		ug/L	5.8E+01	Max	(2)	3.4E+00	Mean	(3)
Chromium	ug/L	1.6E+00	N/A	1.3E+01		ug/L	1.3E+01	Max	(2)	1.6E+00	Mean	(3)
Cyanide	ug/L	1.8E+00	N/A	2.2E+00	J	ug/L	2.2E+00	Max	(2)	1.8E+00	Mean	(3)
Manganese	ug/L	1.1E+03	N/A	9.8E+03	J	ug/L	9.8E+03	Max	(2)	1.1E+03	Mean	(3)
Thallium	ug/L	6.0E-01	N/A	7.5E+00		ug/L	7.5E+00	Max	(2)	6.0E-01	Mean	(3)

(1) Only COPCs selected on Table 2.53 appear.
(2) Maximum detected concentration is used as RME EPC when evaluating groundwater.
(3) When the maximum detected concentration is selected as the RME EPC, the arithmetic mean concentration is selected as the CT EPC.
(4) If the arithmetic mean concentration equals or exceeds the maximum detected concentration, the maximum detected concentration is used as the CT EPC.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 3.51
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soil/Groundwater
Exposure Medium: Air
Exposure Point: Lagoon Area

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Modeled Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
1,2-Dichlorobenzene	ug/m^3	N/A	N/A	1.1E-01		ug/m^3	1.1E-01	Max	(2)	1.1E-01	Max	(2)
1,2-Dichloroethane	ug/m^3	N/A	N/A	8.6E-03		ug/m^3	8.6E-03	Max	(2)	8.6E-03	Max	(2)
1,3-Dichlorobenzene	ug/m^3	N/A	N/A	9.4E-03		ug/m^3	9.4E-03	Max	(2)	9.4E-03	Max	(2)
1,4-Dichlorobenzene	ug/m^3	N/A	N/A	2.8E-02		ug/m^3	2.8E-02	Max	(2)	2.8E-02	Max	(2)
Benzene	ug/m^3	N/A	N/A	9.6E-03		ug/m^3	9.6E-03	Max	(2)	9.6E-03	Max	(2)
Bromodichloromethane	ug/m^3	N/A	N/A	2.1E-02		ug/m^3	2.1E-02	Max	(2)	2.1E-02	Max	(2)
Carbon tetrachloride	ug/m^3	N/A	N/A	6.9E-02		ug/m^3	6.9E-02	Max	(2)	6.9E-02	Max	(2)
Chlorobenzene	ug/m^3	N/A	N/A	1.6E-02		ug/m^3	1.6E-02	Max	(2)	1.6E-02	Max	(2)
Chloroform	ug/m^3	N/A	N/A	7.1E-02		ug/m^3	7.1E-02	Max	(2)	7.1E-02	Max	(2)
Methylene chloride	ug/m^3	N/A	N/A	1.9E-04		ug/m^3	1.9E-04	Max	(2)	1.9E-04	Max	(2)
Tetrachloroethylene	ug/m^3	N/A	N/A	3.2E-02		ug/m^3	3.2E-02	Max	(2)	3.2E-02	Max	(2)
Trichloroethene	ug/m^3	N/A	N/A	3.3E-02		ug/m^3	3.3E-02	Max	(2)	3.3E-02	Max	(2)
Xylene (total)	ug/m^3	N/A	N/A	7.3E-02		ug/m^3	7.3E-02	Max	(2)	7.3E-02	Max	(2)

(1) See attachment 3.
(2) The maximum modeled concentration is utilized for conservative purposes.
Max = Maximum Detected Concentration
N/A = Not Applicable
UCL = Upper Confidence Limit
EPC = Exposure Point Concentration
RME = Reasonable Maximum Exposure
CT = Central Tendency

TABLE 4.0

VALUES USED FOR DAILY INTAKE CALCULATIONS

TABLE 4.1

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Soils
Exposure Medium: Surface Soil/Sludge
Exposure Point: Lagoons (1 through 5) and Warehouse Area
Receptor Population: Trespasser
Receptor Age: Adolescent (ages 9-18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	100	USEPA, 1997	50	USEPA, 1997	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	see Tables 3.1, 3.3, 3.5, 3.7, 3.9 and 3.15	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	4,700	USEPA, 2000	4,700	USEPA, 2000	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
	AF	Skin Adherence Factor	mg/cm^2-day	0.23	USEPA, 2000	0.23	USEPA, 2000	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.2

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoons (1 through 5)
Receptor Population: Trespasser
Receptor Age: Adolescent (ages 9-18)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	CW	Chemical Concentration in Water	µg/L	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	4,700	USEPA, 2000	4,700	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	1	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	events/day	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	36	Prof. Judgement	24	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	CDI (mg/kg-day) =
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	--	0.001	--	
	CF2	Conversion Factor 2	mg/µg	0.001	--	0.001	--	

TABLE 4.3

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoons (1 through 5) and Warehouse Area
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration In Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	100	USEPA, 1997	50	USEPA, 1997	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	112	Prof. Judgement	56	Prof. Judgement	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	5,700	USEPA, 2000	5,700	USEPA, 2000	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
	AF	Skin Adherence Factor	mg/cm^2-day	0.07	USEPA, 2000	0.07	USEPA, 2000	
	EF	Exposure Frequency	days/year	112	Prof. Judgement	56	Prof. Judgement	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.4

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoons (1 through 5)
Receptor Population: Park Visitor
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	CW	Chemical Concentration in Water	μg/L	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	5,700	USEPA, 2000	5,700	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	1	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	events/day	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	CDI (mg/kg-day) =
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	- -	0.001	- -	
	CF2	Conversion Factor 2	mg/μg	0.001	- -	0.001	- -	

TABLE 4.5

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

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

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	200	USEPA, 1997	100	USEPA, 1997	CS x IR x FI x EF x ED x CF / BW x AT
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	112	Prof. Judgement	56	Prof. Judgement	
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	--	0.000001	--	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	see Tables 3.2, 3.4, 3.6, 3.8, 3.10 and 3.16	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	2,900	USEPA, 2000	2,900	USEPA, 2000	CS x SA x AF x EF x ED x DAF x CF / BW x AT
	AF	Skin Adherence Factor	mg/cm^2-day	0.3	USEPA, 2000	0.3	USEPA, 2000	
	EF	Exposure Frequency	days/year	112	Prof. Judgement	56	Prof. Judgement	
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	
	DAF	Dermal Absorption Factor	--	chemical specific	--	chemical specific	--	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	--	0.000001	--	

TABLE 4.6

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

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

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	CW	Chemical Concentration in Water	μg/L	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	2,900	USEPA, 2000	2,900	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	1	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	events/day	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	CDI (mg/kg-day) =
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	- -	0.001	- -	
	CF2	Conversion Factor 2	mg/μg	0.001	- -	0.001	- -	

TABLE 4.7

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoons (1 through 5)
Receptor Population: Commercial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	100	USEPA, 1997	50	USEPA, 1997	CS x IR x FI x EF x ED x CF / BW x AT
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	250	USEPA, 2000	219	USEPA, 2000	
	ED	Exposure Duration	years	25	USEPA, 2000	9	USEPA, 2000	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, 1989	3,285	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	3,300	USEPA, 2000	3,300	USEPA, 2000	CS x SA x AF x EF x ED x DAF x CF / BW x AT
	AF	Skin Adherence Factor	mg/cm^2-day	0.07	USEPA, 2000	0.07	USEPA, 2000	
	EF	Exposure Frequency	days/year	250	USEPA, 2000	219	USEPA, 2000	
	ED	Exposure Duration	years	25	USEPA, 2000	9	USEPA, 2000	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, 1989	3,285	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.8

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil/Sludge
Exposure Point: Lagoons (1 through 5)
Receptor Population: Utility Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	200	USEPA, 1996	200	USEPA, 1996	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	66	Prof. Judgement	22	Prof. Judgement	
	ED	Exposure Duration	years	1	Prof. Judgement	1	Prof. Judgement	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	USEPA, 1989	365	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	see Tables 3.2, 3.4, 3.6, 3.8, and 3.10	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	3,300	USEPA, 2000	3,300	USEPA, 2000	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
	AF	Skin Adherence Factor	mg/cm^2-day	0.2	USEPA, 2000	0.2	USEPA, 2000	
	EF	Exposure Frequency	days/year	66	Prof. Judgement	22	Prof. Judgement	
	ED	Exposure Duration	years	1	Prof. Judgement	1	Prof. Judgement	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	USEPA, 1989	365	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.9

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soil/Groundwater
Exposure Medium: Air
Exposure Point: Lagoons (1 through 5)
Receptor Population: Utility Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Modeled Concentration in Air	$\mu g/m^3$	see Table 3.50	see Table 3.50	see Table 3.50	see Table 3.50	
	ET	Exposure Time	hrs/day	8	Prof. Judgement	8	Prof. Judgement	Chronic Daily Intake (CDI) ($\mu g/m^3$) =
	EF	Exposure Frequency	days/year	66	Prof. Judgement	22	Prof. Judgement	
	ED	Exposure Duration	years	1	Prof. Judgement	1	Prof. Judgement	$\frac{CA \times ET \times EF \times ED}{CF \times AT}$
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	USEPA, 1989	365	USEPA, 1989	
	CF	Conversion Factor	hr/day	24	- -	24	- -	

TABLE 4.10

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Lagoons (1 through 5)
Receptor Population: Utility Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	CW	Chemical Concentration in Water	μg/L	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	see Tables 3.11 to 3.14	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	3,300	USEPA, 2000	3,300	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	1	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	events/day	1	Prof. Judgement	1	Prof. Judgement.	
	EF	Exposure Frequency	days/year	66	Prof. Judgement	22	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	1	Prof. Judgement	1	Prof. Judgement	CDI (mg/kg-day) =
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	365	USEPA, 1989	365	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	- -	0.001	- -	
	CF2	Conversion Factor 2	mg/μg	0.001	- -	0.001	- -	

TABLE 4.11

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

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

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	see Table 3.16	see Table 3.16	see Table 3.16	see Table 3.16	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	100	USEPA, 1997	50	USEPA, 1997	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	150	USEPA, 1994c	150	USEPA, 1994c	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Table 3.16	see Table 3.16	see Table 3.16	see Table 3.16	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	5,700	USEPA, 2000	5,700	USEPA, 2000	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
	AF	Skin Adherence Factor	mg/cm^2-day	0.07	USEPA, 2000	0.07	USEPA, 2000	
	EF	Exposure Frequency	days/year	150	USEPA, 1994c	150	USEPA, 1994c	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.12

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Soils
Exposure Medium: Soil
Exposure Point: Warehouse Area
Receptor Population: On-Site Resident
Receptor Age: Young Child (ages 1-6)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	see Table 3.16	see Table 3.16	see Table 3.16	see Table 3.16	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	mg/day	200	USEPA, 1997	100	USEPA, 1997	CS x IR x FI x EF x ED x CF / BW x AT
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	150	USEPA, 1994c	150	USEPA, 1994c	
	ED	Exposure Duration	years	6	USEPA, 1994c	2	USEPA, 1994c	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	--	0.000001	--	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Table 3.16	see Table 3.16	see Table 3.16	see Table 3.16	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	2,900	USEPA, 2000	2,900	USEPA, 2000	CS x SA x AF x EF x ED x DAF x CF / BW x AT
	AF	Skin Adherence Factor	mg/cm^2-day	0.3	USEPA, 2000	0.3	USEPA, 2000	
	EF	Exposure Frequency	days/year	150	USEPA, 1994c	150	USEPA, 1994c	
	ED	Exposure Duration	years	6	USEPA, 1994c	2	USEPA, 1994c	
	DAF	Dermal Absorption Factor	--	chemical specific	--	chemical specific	--	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	--	0.000001	--	

TABLE 4.13

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Surface Water
Exposure Medium: Surface Water
Exposure Point: Hoosic River
Receptor Population: Recreational Visitor
Receptor Age: Adolescent (age 9-16)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.17	see Tables 3.17	see Tables 3.17	see Tables 3.17	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate of Water	mL/hr	50	USEPA, 1989	50	USEPA, 1989	$\frac{CW \times IR \times ET \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	ET	Exposure Time	hrs/day	2.5	Prof. Judgement	0.5	Prof. Judgement	
	EF	Exposure Frequency	days/year	36	Prof. Judgement	24	Prof. Judgement	
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	
	CF2	Conversion Factor 2	L/mL	0.001	--	0.001	--	
Dermal	CW	Chemical Concentration in Water	µg/L	see Tables 3.17	see Tables 3.17	see Tables 3.17	see Tables 3.17	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	4,700	USEPA, 2000	4,700	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	2.5	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	event/day	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	36	Prof. Judgement	24	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	CDI (mg/kg-day) =
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	--	0.001	--	
	CF2	Conversion Factor 2	mg/µg	0.001	--	0.001	--	

TABLE 4.14

VALUES USED FOR DAILY INTAKE CALCULATIONS

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	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.18	see Table 3.18	see Table 3.18	see Table 3.18	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate of Sediment	mg/day	100	USEPA, 1997	50	USEPA, 1997	CS x IR x FI x EF x ED x CF / BW x AT
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	36	Prof. Judgement	24	Prof. Judgement	
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Table 3.18	see Table 3.18	see Table 3.18	see Table 3.18	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	4,700	USEPA, 2000	4,700	USEPA, 2000	CS x SA x AF x EF x ED x DAF x CF / BW x AT
	AF	Skin Adherence Factor	mg/cm^2-day	0.23	USEPA, 2000	0.23	USEPA, 2000	
	EF	Exposure Frequency	days/year	36	Prof. Judgement	24	Prof. Judgement	
	ED	Exposure Duration	years	10	USEPA, 1997	5	USEPA, 1997	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	45	USEPA, 1997	45	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, 1989	1,825	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.15

VALUES USED FOR DAILY INTAKE CALCULATIONS

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	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.17	see Tables 3.17	see Tables 3.17	see Tables 3.17	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate of Water	mL/hr	50	USEPA, 1989	50	USEPA, 1989	$\frac{CW \times IR \times ET \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	ET	Exposure Time	hrs/day	2.5	Prof. Judgement	0.5	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	
	CF2	Conversion Factor 2	L/mL	0.001	--	0.001	--	
Dermal	CW	Chemical Concentration in Water	µg/L	see Tables 3.17	see Tables 3.17	see Tables 3.17	see Tables 3.17	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	5,700	USEPA, 2000	5,700	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	2.5	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	event/day	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	CDI (mg/kg-day) =
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	--	0.001	--	
	CF2	Conversion Factor 2	mg/µg	0.001	--	0.001	--	

TABLE 4.16

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

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

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.18	see Table 3.18	see Table 3.18	see Table 3.18	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate of Sediment	mg/day	100	USEPA, 1997	50	USEPA, 1997	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Table 3.18	see Table 3.18	see Table 3.18	see Table 3.18	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	5,700	USEPA, 2000	5,700	USEPA, 2000	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
	AF	Skin Adherence Factor	mg/cm^2-day	0.07	USEPA, 2000	0.07	USEPA, 2000	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.17

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL 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	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.17	see Tables 3.17	see Tables 3.17	see Tables 3.17	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate of Water	mL/hr	50	USEPA, 1989	50	USEPA, 1989	$\frac{CW \times IR \times ET \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	ET	Exposure Time	hrs/day	2.5	Prof. Judgement	0.5	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF1	Conversion Factor 1	mg/µg	0.001	- -	0.001	- -	
	CF2	Conversion Factor 2	L/mL	0.001	- -	0.001	- -	
Dermal	CW	Chemical Concentration in Water	µg/L	see Tables 3.17	see Tables 3.17	see Tables 3.17	see Tables 3.17	Organics:
	DA	Dose Absorbed per Unit Area per Event	mg/cm^2-event	see Attachment 4	USEPA, 1999a	see Attachment 4	USEPA, 1999a	Chronic Daily Intake (CDI) (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	2,900	USEPA, 2000	2,900	USEPA, 2000	
	PC	Permeability Constant	cm/hr	chemical specific	USEPA, 2000	chemical specific	USEPA, 2000	$\frac{DA \times SA \times EV \times EF \times ED}{BW \times AT}$
	ET	Event Time	hrs/event	2.5	Prof. Judgement	0.5	Prof. Judgement	
	EV	Event Frequency	event/day	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	Inorganics:
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	CDI (mg/kg-day) =
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	$\frac{CW \times SA \times PC \times ET \times EV \times EF \times ED \times CF1 \times CF2}{BW \times AT}$
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF1	Conversion Factor 1	L/cm^3	0.001	- -	0.001	- -	
	CF2	Conversion Factor 2	mg/µg	0.001	- -	0.001	- -	

TABLE 4.18

VALUES USED FOR DAILY INTAKE CALCULATIONS

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	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.18	see Table 3.18	see Table 3.18	see Table 3.18	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate of Sediment	mg/day	200	USEPA, 1997	100	USEPA, 1997	$\frac{CS \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$
	FI	Fraction Ingested	unitless	1	Prof. Judgement	1	Prof. Judgement	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	
Dermal	CS	Chemical Concentration in Soil	mg/kg	see Table 3.18	see Table 3.18	see Table 3.18	see Table 3.18	CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	2,900	USEPA, 2000	2,900	USEPA, 2000	$\frac{CS \times SA \times AF \times EF \times ED \times DAF \times CF}{BW \times AT}$
	AF	Skin Adherence Factor	mg/cm^2-day	0.3	USEPA, 2000	0.3	USEPA, 2000	
	EF	Exposure Frequency	days/year	60	Prof. Judgement	30	Prof. Judgement	
	ED	Exposure Duration	years	6	USEPA, 1997	2	USEPA, 1997	
	DAF	Dermal Absorption Factor	- -	chemical specific	- -	chemical specific	- -	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	
	CF	Conversion Factor	kg/mg	0.000001	- -	0.000001	- -	

TABLE 4.19

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Current
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water (Residential Wells)
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.19 to 3.26	see Tables 3.19 to 3.26	see Tables 3.19 to 3.26	see Tables 3.19 to 3.26	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-W	Ingestion Rate of Water	liters/day	2	USEPA, 1994c	1.4	USEPA, 1994c	CW x IR x EF x ED x CF1 / BW x AT
	EF	Exposure Frequency	days/year	350	USEPA, 1994c	350	USEPA, 1994c	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	

TABLE 4.20

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

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

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.19 to 3.26	see Tables 3.19 to 3.26	see Tables 3.19 to 3.26	see Tables 3.19 to 3.26	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-W	Ingestion Rate of Water	liters/day	1.5	USEPA, 1997	0.87	USEPA, 1997	$\frac{CW \times IR \times EF \times ED \times CF1}{BW \times AT}$
	EF	Exposure Frequency	days/year	350	USEPA, 1994c	350	USEPA, 1994c	
	ED	Exposure Duration	years	6	USEPA, 1994c	2	USEPA, 1994c	
	CF1	Conversion Factor 1	mg/µg	0.001	- -	0.001	- -	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	

TABLE 4.21

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site/Off-Site Wells
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.27 to 3.49	see Tables 3.27 to 3.49	see Tables 3.27 to 3.49	see Tables 3.27 to 3.49	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-W	Ingestion Rate of Water	liters/day	2	USEPA, 1994c	1.4	USEPA, 1994c	$\frac{CW \times IR \times EF \times ED \times CF1}{BW \times AT}$
	EF	Exposure Frequency	days/year	350	USEPA, 1994c	350	USEPA, 1994c	
	ED	Exposure Duration	years	24	USEPA, 1997	7	USEPA, 1997	
	CF1	Conversion Factor 1	mg/µg	0.001	--	0.001	--	
	BW	Body Weight	kg	70	USEPA, 1997	70	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, 1989	2,555	USEPA, 1989	

TABLE 4.22

VALUES USED FOR DAILY INTAKE CALCULATIONS

POWNAL TANNERY

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: On-Site/Off-Site Wells
Receptor Population: Resident
Receptor Age: Young Child (Ages 1-6)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	µg/L	see Tables 3.27 to 3.49	see Tables 3.27 to 3.49	see Tables 3.27 to 3.49	see Tables 3.27 to 3.49	Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-W	Ingestion Rate of Water	liters/day	1.5	USEPA, 1997	0.87	USEPA, 1997	$\frac{CW \times IR \times EF \times ED \times CF1}{BW \times AT}$
	EF	Exposure Frequency	days/year	350	USEPA, 1994c	350	USEPA, 1994c	
	ED	Exposure Duration	years	6	USEPA, 1994c	2	USEPA, 1994c	
	CF1	Conversion Factor 1	mg/µg	0.001	- -	0.001	- -	
	BW	Body Weight	kg	15	USEPA, 1997	15	USEPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	730	USEPA, 1989	

TABLE 5.0

NON-CANCER TOXICITY DATA – ORAL/DERMAL

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
POWNAL TANNERY

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YY)
1,2-Dichlorobenzene	Chronic	9E-02	mg/kg-day	(4)	9E-02	mg/kg-day	NOAEL	1000	IRIS	02/01/01
1,2-Dichloroethane	Chronic	3E-02	mg/kg-day	(4)	3E-02	mg/kg-day	N/A	N/A	NCEA	05/98
1,3-Dichlorobenzene	Chronic	9E-04	mg/kg-day	(4)	9E-04	mg/kg-day	N/A	N/A	NCEA	05/98
1,4-Dichlorobenzene	Chronic	3E-02	mg/kg-day	(4)	3E-02	mg/kg-day	N/A	N/A	NCEA	05/98
Benzene	Chronic	3E-03	mg/kg-day	(4)	3E-03	mg/kg-day	N/A	N/A	NCEA	05/98
Bromodichloromethane	Chronic	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Kidney	1000	IRIS	02/01/01
Carbon tetrachloride	Chronic	7E-04	mg/kg-day	(4)	7E-04	mg/kg-day	Liver	1000	IRIS	02/01/01
Chlorobenzene	Chronic	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Liver	1000	IRIS	02/01/01
Chloroform	Chronic	1E-02	mg/kg-day	(4)	1E-02	mg/kg-day	Liver	1000	IRIS	02/01/01
Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	Chronic	6E-02	mg/kg-day	(4)	6E-02	mg/kg-day	Liver	100	IRIS	02/01/01
Tetrachloroethylene	Chronic	1E-02	mg/kg-day	(4)	1E-02	mg/kg-day	Liver	1000	IRIS	02/01/01
Trichloroethene	Chronic	6E-03	mg/kg-day	(4)	6E-03	mg/kg-day	N/A	N/A	NCEA	05/98
Xylene (total)	Chronic	2E+00	mg/kg-day	(4)	2E+00	mg/kg-day	Nervous System	100	IRIS	02/01/01
2-Methylnaphthalene (3)	Chronic	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Body Weight	3000	IRIS	02/01/01
4-Methylphenol	Chronic	5E-03	mg/kg-day	(4)	5E-03	mg/kg-day	Nervous System	1000	HEAST	1997
Acetophenone	Chronic	1E-01	mg/kg-day	(4)	1E-01	mg/kg-day	NOAEL	3000	IRIS	02/01/01
Atrazine	Chronic	4E-02	mg/kg-day	(4)	4E-02	mg/kg-day	Whole body	100	IRIS	02/01/01
Benzo(a)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
bis(2-Chloroethoxy)methane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-chloroethyl)ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-ethylhexyl)phthalate	Chronic	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Liver	1000	IRIS	02/01/01
Carbazole	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N-Nitroso-di-n-propylamine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Naphthalene	N/A	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Body Weight	3000	IRIS	02/01/01
Nitrobenzene	Chronic	5E-04	mg/kg-day	(4)	5E-04	mg/kg-day	Blood	10000	IRIS	02/01/01
Pentachlorophenol	Chronic	3E-02	mg/kg-day	(4)	3E-02	mg/kg-day	Kidney	100	IRIS	02/01/01
Phenanthrene (3)	N/A	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Body Weight	3000	IRIS	02/01/01

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
POWNAL TANNERY

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YY)
4,4'-DDE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	Chronic	3E-05	mg/kg-day	(4)	3E-05	mg/kg-day	Liver	1000	IRIS	02/01/01
alpha-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1242 (3)	Chronic	2E-05	mg/kg-day	(4)	2E-05	mg/kg-day	Immune System	300	IRIS	02/01/01
Aroclor 1248 (3)	Chronic	2E-05	mg/kg-day	(4)	2E-05	mg/kg-day	Immune System	300	IRIS	02/01/01
Aroclor 1254	Chronic	2E-05	mg/kg-day	(4)	2E-05	mg/kg-day	Immune System	300	IRIS	02/01/01
Aroclor 1260 (3)	Chronic	2E-05	mg/kg-day	(4)	2E-05	mg/kg-day	Immune System	300	IRIS	02/01/01
beta-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
delta-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	Chronic	5E-05	mg/kg-day	(4)	5E-05	mg/kg-day	Liver	100	IRIS	02/01/01
Heptachlor	Chronic	5E-04	mg/kg-day	(4)	5E-04	mg/kg-day	Liver	300	IRIS	02/01/01
Heptachlor epoxide	Chronic	1E-05	mg/kg-day	(4)	1E-05	mg/kg-day	Liver	1000	IRIS	02/01/01
PCB TEQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dioxin TEQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Antimony	Chronic	4E-04	mg/kg-day	0.15	6E-05	mg/kg-day	Blood	1000	IRIS	02/01/01
Arsenic	Chronic	3E-04	mg/kg-day	(4)	3E-04	mg/kg-day	Skin	3	IRIS	02/01/01
Barium	Chronic	7E-02	mg/kg-day	0.07	5E-03	mg/kg-day	NOAEL	3	IRIS	02/01/01
Cadmium (food)	Chronic	1E-03	mg/kg-day	0.01	1E-05	mg/kg-day	Kidney	10	IRIS	02/01/01
Chromium (3)	Chronic	2E+00	mg/kg-day	0.013	2.0E-02	mg/kg-day	NOAEL	1000	IRIS	02/01/01
Chromium VI	Chronic	3E-03	mg/kg-day	0.013	3.9E-05	mg/kg-day	NOAEL	300	IRIS	02/01/01
Cyanide, free	Chronic	2E-02	mg/kg-day	(4)	2E-02	mg/kg-day	Nervous System	500	IRIS	02/01/01
Manganese (soils) (3)	Chronic	7E-02	mg/kg-day	0.04	2.8E-03	mg/kg-day	Nervous System	1	IRIS	02/01/01
Manganese (water) (3)	Chronic	2E-02	mg/kg-day	0.04	9.6E-04	mg/kg-day	Nervous System	1	IRIS	02/01/01
Mercury (inorganic - water)	Chronic	3E-04	mg/kg-day	0.07	2.1E-05	mg/kg-day	Immune System	1000	IRIS	02/01/01
Mercury (organic - soils) (3)	Chronic	1E-04	mg/kg-day	(4)	1E-04	mg/kg-day	Nervous System	10	IRIS	02/01/01
Thallium (3)	Chronic	8E-05	mg/kg-day	(4)	8E-05	mg/kg-day	NOAEL	3000	IRIS	02/01/01
Vanadium	Chronic	9E-03	mg/kg-day	0.026	2.3E-04	mg/kg-day	NOAEL	100	IRIS	02/01/01

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
POWNAL TANNERY

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YY)

(1) Antimony oral absorption efficiency from ATSDR, 1997.
Barium oral absorption efficiency from ATSDR, 1997.
Cadmium oral absorption efficiency from McLellan et al., 1978.
Chromium oral absorption efficiency from Donaldson and Barreras, 1966.
Manganese oral absorption efficiency from Davidsson et al., 1989.
Mercury oral absorption efficiency from USEPA, 2000.
Vanadium oral absorption efficiency from Conklin et al., 1982.

(2) Calculated as: (oral RfD) x (oral to dermal adjustment factor).

(3) RfD for Aroclor 1254 used as a surrogate for Aroclor 1242, Aroclor 1248, and Aroclor 1260.
RfDs for managanese are based on total allowable intake (10 mg/day) minus the background intake (5 mg/day). The remaining intake (5 mg/day) is divided by 70 kg.
RfD for naphthalene used as a surrogate for phenanthrene and 2-methylnaphthalene.

(4) Oral absorption efficiency exceeds 50%. Therefore, no adjustment of the oral reference dose is necessary.

(5) Permeability constants (Kp) used for surface water absorption calculations: 1E-03 cm/hr for arsenic, manganese, mercury, thallium, and vanadium; 2E-03 cm/hr for chromium; 1.4 cm/hr for PCB TEQ and dioxin TEQ (USEPA, 1999a); for organics, see attachment 4.

IRIS = Integrated Risk Information System
HEAST = Health Effects Assessment Summary Tables
NCEA = National Center for Environmental Assessment
N/A = Not Applicable
NOAEL = No Observable Adverse Effect Level

RfD for chromium is based on Chromium III.
RfD for thallium is based on thallium sulfate.
RfD for mercury (organic), based on methylmercury.

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION

POWNAL TANNERY

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units	Adjusted Inhalation RfD	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ	Dates (MM/DD/YY)
1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	Chronic	8E+02	ug/m^3	-	-	Liver	100	IRIS	02/01/01
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromodichloromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbon tetrachloride	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene chloride	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethylene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylene (total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

IRIS = Integrated Risk Information System

N/A = Not Applicable; Inhalation not evaluated as a pathway of concern.

TABLE 6.0

CANCER TOXICITY DATA – ORAL/DERMAL

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
POWNAL TANNERY

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence Category	Source	Date (MM/DD/YY)
1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
1,2-Dichloroethane	9.1E-02	(1)	9.1E-02	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
1,4-Dichlorobenzene	2.4E-02	(1)	2.4E-02	(mg/kg-day) $^{-1}$	B2	HEAST	1997
Benzene	5.5E-02	(1)	5.5E-02	(mg/kg-day) $^{-1}$	A	IRIS	02/01/01
Bromodichloromethane	6.2E-02	(1)	6.2E-02	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Carbon tetrachloride	1.3E-01	(1)	1.3E-01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Chlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Chloroform	6.1E-03	(1)	6.1E-03	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Methyl tert-butyl ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene chloride	7.5E-03	(1)	7.5E-03	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Tetrachloroethylene	5.2E-02	(1)	5.2E-02	(mg/kg-day) $^{-1}$	B2	NCEA	05/98
Trichloroethene	1.1E-02	(1)	1.1E-02	(mg/kg-day) $^{-1}$	B2	NCEA	05/98
Xylene (total)	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
2-Methylnaphthalene	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
4-Methylphenol	N/A	N/A	N/A	N/A	C	IRIS	02/01/01
Acetophenone	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Atrazine	2.2E-01	(1)	2.2E-01	(mg/kg-day) $^{-1}$	C	HEAST	1997
Benzo(a)anthracene	7.3E-01	(1)	7.3E-01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Benzo(a)pyrene	7.3E+00	(1)	7.3E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Benzo(b)fluoranthene	7.3E-01	(1)	7.3E-01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Benzo(k)fluoranthene	7.3E-02	(1)	7.3E-02	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
bis(2-Chloroethoxy)methane	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Bis(2-chloroethyl)ether	1.1E+00	(1)	1.1E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Bis(2-ethylhexyl)phthalate	1.4E-02	(1)	1.4E-02	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Carbazole	2.0E-02	(1)	2.0E-02	(mg/kg-day) $^{-1}$	B2	HEAST	1997
Dibenz(a,h)anthracene	7.3E+00	(1)	7.3E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Indeno(1,2,3-cd)pyrene	7.3E-01	(1)	7.3E-01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
N-Nitroso-di-n-propylamine	7.0E+00	(1)	7.0E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Naphthalene	N/A	N/A	N/A	N/A	C	IRIS	02/01/01
Nitrobenzene	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Pentachlorophenol	1.2E-01	(1)	1.2E-01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Phenanthrene	N/A	N/A	N/A	N/A	D	IRIS	02/01/01

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
POWNAL TANNERY

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence Category	Source	Date (MM/DD/YY)
4,4'-DDE	3.4E-01	(1)	3.4E-01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Aldrin	1.7E+01	(1)	1.7E+01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
alpha-BHC	6.3E+00	(1)	6.3E+00	(mg/kg-day) $^{-1}$	C	IRIS	02/01/01
Aroclor 1242	2.0E+00	(1)	2.0E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Aroclor 1248	2.0E+00	(1)	2.0E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Aroclor 1254	2.0E+00	(1)	2.0E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Aroclor 1260	2.0E+00	(1)	2.0E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
beta-BHC	1.8E+00	(1)	1.8E+00	(mg/kg-day) $^{-1}$	C	IRIS	02/01/01
delta-BHC	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Dieldrin	1.6E+01	(1)	1.6E+01	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Heptachlor	4.5E+00	(1)	4.5E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
Heptachlor epoxide	9.1E+00	(1)	9.1E+00	(mg/kg-day) $^{-1}$	B2	IRIS	02/01/01
PCB TEQ	1.5E+05	(1)	1.5E+05	(mg/kg-day) $^{-1}$	B2	HEAST	1997
Dioxin TEQ	1.5E+05	(1)	1.5E+05	(mg/kg-day) $^{-1}$	B2	HEAST	1997
Antimony	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Arsenic	1.5E+00	(1)	1.5E+00	(mg/kg-day) $^{-1}$	A	IRIS	02/01/01
Barium	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Cadmium	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Chromium	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Chromium VI	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Cyanide, free	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Manganese (soils)	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Manganese (water)	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Mercury (inorganic - water)	N/A	N/A	N/A	N/A	C	IRIS	02/01/01
Mercury (organic - soils)	N/A	N/A	N/A	N/A	C	IRIS	02/01/01
Thallium	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Vanadium	N/A	N/A	N/A	N/A	D	IRIS	02/01/01

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
POWNAL TANNERY

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence Category	Source	Date (MM/DD/YY)

IRIS = Integrated Risk Information System
HEAST = Health Effects Assessment Summary Tables
NCEA = National Center for Environmental Assessment
RME = Reasonable Maximum Exposure
CT = Central Tendency
N/A = Not Applicable

Slope factor for benzo(a)pyrene, along with the appropriate relative potency factor (USEPA, 1993), used for the other carcinogenic PAHs.

Weight of evidence for mercury (organic), based on methylmercury.

(1) Oral absorption efficiency exceeds 50%. Therefore, no adjustment of the oral slope factor is necessary.

(2) Calculated as: (oral slope factor) / (oral to dermal adjustment factor)

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - Indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen (by the oral route)

E - Evidence of noncarcinogenicity

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION

POWNAL TANNERY

Chemical of Potential Concern	Unit Risk	Units	Adjustment	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guideline Description	Source	Date (MM/DD/YY)
1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
1,2-Dichloroethane	2.6E-05	$ug/m^{3\ -1}$	-	-	-	B2	IRIS	02/01/01
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
1,4-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	C	HEAST	1997
Benzene	7.8E-06	$ug/m^{3\ -1}$	-	-	-	A	IRIS	02/01/01
Bromodichloromethane	N/A	N/A	N/A	N/A	N/A	B2	IRIS	02/01/01
Carbon tetrachloride	1.5E-05	$ug/m^{3\ -1}$	-	-	-	B2	IRIS	02/01/01
Chlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/01/01
Chloroform	2.3E-05	$ug/m^{3\ -1}$	-	-	-	B2	IRIS	02/01/01
Methylene chloride	4.7E-07	$ug/m^{3\ -1}$	-	-	-	B2	IRIS	02/01/01
Tetrachloroethylene	9.5E-07	$ug/m^{3\ -1}$	-	-	-	B2	NCEA	5/98
Trichloroethene	1.7E-06	$ug/m^{3\ -1}$	-	-	-	B2	NCEA	5/98
Xylene (total)	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/01/01

IRIS = Integrated Risk Information System

HEAST = Health Effects Assessment Summary Tables

NCEA = National Center for Environmental Assessment

N/A = Not Applicable; Inhalation not evaluated as a pathway of concern.

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen (by the oral route)

E - Evidence of noncarcinogenicity