



Table 4. Receptor Exposure Parameters

Pathway	Parameter	Resident Child
Inhalation of Volatilized Gases	IR - Inhalation Rate (m ³ /h)	0.42
	EF - Exposure Frequency (d/y)	350
	ED - Exposure Duration (y)	6
	ET - Exposure Time (h/d)	24
	BW - Body Weight (kg)	15
	AT - Averaging Time, Carcinogen (d)	25,550
	AT - Averaging Time, Noncarcinogen (d)	2,190
Inhalation of Particulate	IR - Inhalation Rate (m ³ /h)	0.6
	EF - Exposure Frequency (d/y)	350
	ED - Exposure Duration (y)	6
	ET - Exposure Time (h/d)	24
	BW - Body Weight (kg)	15
	AT - Averaging Time, Carcinogen (d)	25,550
	AT - Averaging Time, Noncarcinogen (d)	2,190
Incidental Ingestion of Soil	IR - Ingestion Rate (mg/d)	200
	EF - Exposure Freq. outdoors (d/y)	350
	ED - Exposure Duration (y)	6
	BW - Body Weight (kg)	15
	AT - Averaging Time, Carcinogen (d)	25,550
	AT - Averaging Time, Noncarcinogen (d)	2,190
	CF - Conversion Factor (kg/mg)	1.00E-06
Dermal Contact with Soil	SA - Surface Area (cm ²)	2000
	ABS - Absorption Coefficient	CSV
	AF - Adherence Factor (mg/cm ²)	1
	ED - Exposure Duration (y)	6
	EF - Exposure Freq. (d/y)	350
	BW - Body Weight (kg)	15
	AT - Averaging Time, Carcinogen (d)	25,550
	AT - Averaging Time, Noncarcinogen (d)	2,190
	CF - Conversion Factor (kg/mg)	1.00E-06

Project Name: Exposure Assessment Modeling

Client: Confidential Strip Mall Owner

Agency: Nevada Division of Environmental Protection (NDEP)

Location: Las Vegas, NV

Chemicals of Concern: Gasoline, tetrachloroethylene (PCE)

Project Goal

In this project, Waterstone aimed through exposure assessment modeling and cost-benefit analysis to obtain agency concurrence on a Remedial Action Plan that limited PCE remediation to on-site soil and groundwater and demonstrated that no off-site soil or groundwater remediation in the adjacent residential area was necessary.

Waterstone's Role

Waterstone was retained by the property owner to conduct a Phase I Environmental Assessment of the property and additional investigation of an on-site dry cleaner yielded detectable levels of PCE. Waterstone evaluated the extent of PCE impacts and the actions needed to conduct a cleanup satisfactory and used exposure assessment modeling to ensure that the site activities were protective of onsite workers, business patrons, and nearby residents. Waterstone also prepared a feasibility study to provide detailed costing with the proposed remediation plan to present the costs and associated incremental benefits of off-site remediation.

Project Challenges and Successes

Waterstone successfully negotiated a remediation plan for the property that did not require off-site remediation of PCE impacted groundwater in a residential area adjacent to the Subject Property; Waterstone also obtained concurrence on a finding of "no further action" from the NDEP once the on-site remediation activities were completed.