Appendix L

Analysis of Risk to Groundwater from EBR-I using RBCA, and Analysis of Risk from BORAX-02 Using Microshield

Appendix L

RBCA and Microshield Results

EBR-08, pages L-1 – L-11

SUMMARY OF RISK AND HAZARD INDEX

Source	Pathway	Resident Child		Resident Adult		Commercial Worker	
		Risk	HI	Risk	HI	Risk	HI
Surficial Soil	Dermal Contact, Ingestion, and Inhalation	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Subsurface Soil	Indoor Inhalation	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Outdoor Inhalation	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Sub-total	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Groundwater	Ingestion	9.54E-06	1.23E+00	6.68E-06	8.58E-01	0.00E+00	0.00E+00
	Indoor Inhalation	5.55E-07	3.15E-02	3.70E-07	2.10E-02	0.00E+00	0.00E+00
	Outdoor Inhalation	5.58E-10	3.16E-05	3.72E-10	2.11E-05	0.00E+00	0.00E+00
	Sub-total	**1.01E-05**	**1.26E+00**	**7.05E-06**	**8.79E-01**	**0.00E+00**	**0.00E+00**
TOTAL		**1.01E-05**	**1.26E+00**	**7.05E-06**	**8.79E-01**	**0.00E+00**	**0.00E+00**

Chemical of Concern	CARCINOGENIC RISK FOR RESIDENT ADULT						
	Surficial Soil: Ingestion, Inhalation, and Dermal Contact	Subsurface Soil: Indoor Inhalation	Subsurface Soil: Outdoor Inhalation	Groundwater: Ingestion	Groundwater: Indoor Inhalation	Groundwater: Outdoor Inhalation	Cumulative Risk
Volatile Organic Compounds							
Benzene	NC	NC	NC	6.66E-06	1.28E-07	1.28E-10	**6.78E-06**
Toluene	NC	NC	NC	-	-	-	**0.00E+00**
Ethylbenzene	NC	NC	NC	-	-	-	**0.00E+00**
Xylenes (mixed)	NC	NC	NC	-	-	-	**0.00E+00**
Ethylene Dibromide (EDB)	NC	NC	NC	NC	NC	NC	**NC**
1,2 Dichloroethane (EDC)	NC	NC	NC	NC	NC	NC	**NC**
Methyl Tert-Butyl Ether (MTBE)	NC	NC	NC	NC	NC	NC	**NC**
PAH Compounds							
Acenapthene	NC	NC	NC	-	-	-	**0.00E+00**
Anthracene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(a)pyrene	NC	NC	NC	1.99E-08	2.05E-07	2.06E-10	**2.25E-07**
Benzo(b)fluoranthene	NC	NC	NC	1.62E-09	1.40E-08	1.40E-11	**1.56E-08**
Benzo(k)fluoranthene	NC	NC	NC	9.95E-11	1.73E-09	1.74E-12	**1.83E-09**
Benzo(a)anthracene	NC	NC	NC	2.23E-09	2.15E-08	2.16E-11	**2.37E-08**
Benzo(g,h,i)perylene	NC	NC	NC	-	-	-	**0.00E+00**
Chrysene	NC	NC	NC	1.68E-11	1.41E-10	1.42E-13	**1.58E-10**
Fluorene	NC	NC	NC	-	-	-	**0.00E+00**
Fluoranthene	NC	NC	NC	-	-	-	**0.00E+00**
Naphthalene	NC	NC	NC	-	-	-	**0.00E+00**
Phenanthrene	NC	NC	NC	-	-	-	**0.00E+00**
Pyrene	NC	NC	NC	-	-	-	**0.00E+00**
User-specified Compounds							
Try this	NC	NC	NC	NC	NC	NC	**NC**
Chemical 2	NC	NC	NC	NC	NC	NC	**NC**
Chemical 3	NC	NC	NC	NC	NC	NC	**NC**
Chemical 4	NC	NC	NC	NC	NC	NC	**NC**
Chemical 5	NC	NC	NC	NC	NC	NC	**NC**
TOTAL	**0.00E+00**	**0.00E+00**	**0.00E+00**	**6.68E-06**	**3.70E-07**	**3.72E-10**	**7.05E-06**

Chemical of Concern	HAZARD QUOTIENTS FOR RESIDENT ADULT						
	Surficial Soil: Ingestion, Inhalation, and Dermal Contact	Subsurface Soil: Indoor Inhalation	Subsurface Soil: Outdoor Inhalation	Groundwater: Ingestion	Groundwater: Indoor Inhalation	Groundwater: Outdoor Inhalation	Cumulative Hazard Index
Volatile Organic Compounds							
Benzene	NC	NC	NC	-	2.00E-02	2.01E-05	**2.01E-02**
Toluene	NC	NC	NC	6.72E-02	3.55E-04	3.56E-07	**6.76E-02**
Ethylbenzene	NC	NC	NC	1.63E-02	1.45E-04	1.45E-07	**1.64E-02**
Xylenes (mixed)	NC	NC	NC	6.63E-03	1.73E-04	1.73E-07	**6.80E-03**
Ethylene Dibromide (EDB)	NC	NC	NC	NC	NC	NC	**NC**
1,2 Dichloroethane (EDC)	NC	NC	NC	NC	NC	NC	**NC**
Methyl Tert-Butyl Ether (MTBE)	NC	NC	NC	NC	NC	NC	**NC**
PAH Compounds							
Acenapthene	NC	NC	NC	6.04E-03	1.19E-04	1.20E-07	**6.16E-03**
Anthracene	NC	NC	NC	1.74E-04	1.22E-06	1.22E-09	**1.75E-04**
Benzo(a)pyrene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(b)fluoranthene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(k)fluoranthene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(a)anthracene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(g,h,i)perylene	NC	NC	NC	4.21E-08	5.39E-05	5.43E-08	**5.40E-05**
Chrysene	NC	NC	NC	-	-	-	**0.00E+00**
Fluorene	NC	NC	NC	3.03E-02	1.05E-05	1.05E-08	**3.03E-02**
Fluoranthene	NC	NC	NC	6.41E-04	4.89E-06	4.91E-09	**6.46E-04**
Naphthalene	NC	NC	NC	7.04E-01	4.94E-05	4.96E-08	**7.04E-01**
Phenanthrene	NC	NC	NC	2.58E-02	7.65E-06	7.69E-09	**2.58E-02**
Pyrene	NC	NC	NC	3.78E-04	7.67E-06	7.71E-09	**3.86E-04**
User-specified Compounds							
Try this	NC	NC	NC	NC	NC	NC	**NC**
Chemical 2	NC	NC	NC	NC	NC	NC	**NC**
Chemical 3	NC	NC	NC	NC	NC	NC	**NC**
Chemical 4	NC	NC	NC	NC	NC	NC	**NC**
Chemical 5	NC	NC	NC	NC	NC	NC	**NC**
TOTAL	**0.00E+00**	**0.00E+00**	**0.00E+00**	**8.58E-01**	**2.10E-02**	**2.11E-05**	**8.79E-01**

Chemical of Concern	CARCINOGENIC RISK FOR RESIDENT CHILD						
	Surficial Soil: Ingestion, Inhalation, and Dermal Contact	Subsurface Soil: Indoor Inhalation	Subsurface Soil: Outdoor Inhalation	Groundwater: Ingestion	Groundwater: Indoor Inhalation	Groundwater: Outdoor Inhalation	Cumulative Risk
Volatile Organic Compounds							
Benzene	NC	NC	NC	9.51E-06	1.92E-07	1.92E-10	**9.70E-06**
Toluene	NC	NC	NC	-	-	-	**0.00E+00**
Ethylbenzene	NC	NC	NC	-	-	-	**0.00E+00**
Xylenes (mixed)	NC	NC	NC	-	-	-	**0.00E+00**
Ethylene Dibromide (EDB)	NC	NC	NC	NC	NC	NC	**NC**
1,2 Dichloroethane (EDC)	NC	NC	NC	NC	NC	NC	**NC**
Methyl Tert-Butyl Ether (MTBE)	NC	NC	NC	NC	NC	NC	**NC**
PAH Compounds							
Acenapthene	NC	NC	NC	-	-	-	**0.00E+00**
Anthracene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(a)pyrene	NC	NC	NC	2.84E-08	3.07E-07	3.09E-10	**3.36E-07**
Benzo(b)fluoranthene	NC	NC	NC	2.32E-09	2.09E-08	2.10E-11	**2.33E-08**
Benzo(k)fluoranthene	NC	NC	NC	1.42E-10	2.60E-09	2.61E-12	**2.74E-09**
Benzo(a)anthracene	NC	NC	NC	3.19E-09	3.22E-08	3.24E-11	**3.54E-08**
Benzo(g,h,i)perylene	NC	NC	NC	-	-	-	**0.00E+00**
Chrysene	NC	NC	NC	2.40E-11	2.11E-10	2.13E-13	**2.36E-10**
Fluorene	NC	NC	NC	-	-	-	**0.00E+00**
Fluoranthene	NC	NC	NC	-	-	-	**0.00E+00**
Naphthalene	NC	NC	NC	-	-	-	**0.00E+00**
Phenanthrene	NC	NC	NC	-	-	-	**0.00E+00**
Pyrene	NC	NC	NC	-	-	-	**0.00E+00**
User-specified Compounds							
Try this	NC	NC	NC	NC	NC	NC	**NC**
Chemical 2	NC	NC	NC	NC	NC	NC	**NC**
Chemical 3	NC	NC	NC	NC	NC	NC	**NC**
Chemical 4	NC	NC	NC	NC	NC	NC	**NC**
Chemical 5	NC	NC	NC	NC	NC	NC	**NC**
TOTAL	**0.00E+00**	**0.00E+00**	**0.00E+00**	**9.54E-06**	**5.55E-07**	**5.58E-10**	**1.01E-05**

Chemical of Concern	HAZARD QUOTIENTS FOR RESIDENT CHILD						
	Surficial Soil: Ingestion, Inhalation, and Dermal Contact	Subsurface Soil: Indoor Inhalation	Subsurface Soil: Outdoor Inhalation	Groundwater: Ingestion	Groundwater: Indoor Inhalation	Groundwater: Outdoor Inhalation	Cumulative Hazard Index
Volatile Organic Compounds							
Benzene	NC	NC	NC	-	3.01E-02	3.02E-05	**3.01E-02**
Toluene	NC	NC	NC	9.61E-02	5.32E-04	5.35E-07	**9.66E-02**
Ethylbenzene	NC	NC	NC	2.33E-02	2.17E-04	2.18E-07	**2.35E-02**
Xylenes (mixed)	NC	NC	NC	9.47E-03	2.59E-04	2.60E-07	**9.73E-03**
Ethylene Dibromide (EDB)	NC	NC	NC	NC	NC	NC	**NC**
1,2 Dichloroethane (EDC)	NC	NC	NC	NC	NC	NC	**NC**
Methyl Tert-Butyl Ether (MTBE)	NC	NC	NC	NC	NC	NC	**NC**
PAH Compounds							
Acenapthene	NC	NC	NC	8.63E-03	1.79E-04	1.80E-07	**8.81E-03**
Anthracene	NC	NC	NC	2.49E-04	1.83E-06	1.84E-09	**2.50E-04**
Benzo(a)pyrene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(b)fluoranthene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(k)fluoranthene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(a)anthracene	NC	NC	NC	-	-	-	**0.00E+00**
Benzo(g,h,i)perylene	NC	NC	NC	6.01E-08	8.09E-05	8.14E-08	**8.10E-05**
Chrysene	NC	NC	NC	-	-	-	**0.00E+00**
Fluorene	NC	NC	NC	4.33E-02	1.57E-05	1.58E-08	**4.33E-02**
Fluoranthene	NC	NC	NC	9.16E-04	7.33E-06	7.37E-09	**9.23E-04**
Naphthalene	NC	NC	NC	1.01E+00	7.40E-05	7.44E-08	**1.01E+00**
Phenanthrene	NC	NC	NC	3.68E-02	1.15E-05	1.15E-08	**3.68E-02**
Pyrene	NC	NC	NC	5.41E-04	1.15E-05	1.16E-08	**5.52E-04**
User-specified Compounds							
Try this	NC	NC	NC	NC	NC	NC	**NC**
Chemical 2	NC	NC	NC	NC	NC	NC	**NC**
Chemical 3	NC	NC	NC	NC	NC	NC	**NC**
Chemical 4	NC	NC	NC	NC	NC	NC	**NC**
Chemical 5	NC	NC	NC	NC	NC	NC	**NC**
TOTAL	**0.00E+00**	**0.00E+00**	**0.00E+00**	**1.23E+00**	**3.15E-02**	**3.16E-05**	**1.26E+00**

SUMMARY OF REPRESENTATIVE CONCENTRATIONS OF CHEMICALS IN SOIL AND GROUNDWATER

Chemical of Concern	Surficial Soil			Subsurface Soil			Groundwater			CRF unsat. zone [-]	Loading to Groundwater (from External Model)	
	Conc. [mg/kg]	No. of Samples	Method of Calculation	Conc. [mg/kg]	No. of Samples	Method of Calculation	Conc. [mg/L]	No. of Samples	Method of Calculation		Wet Soil Conc. [mg/kg]	Mass Loading [g/yr]
Volatile Organic Compounds												
☑ Benzene	0	0		2	1		1			1	1	35.01
☑ Toluene	0	0		19	1		1			1	1	27.44
☑ Ethylbenzene	0	0		7	1		1			1	1	10.79
☑ Xylenes (mixed)	0	0		58	1		1			1	1	11.42
☐ Ethylene Dibromide (EDB)	0	0		0	0		1			1	1	70.12
☐ 1,2 Dichloroethane (EDC)	0	0		0	0		1			1	1	65.41
☐ Methyl Tert-Butyl Ether (MTBE)	0	0		0	0		1			1	1	70.33
PAH Compounds												
☑ Acenapthene	0	0		9.1	1		1			1	1	3.98
☑ Anthracene	0	0		5.20078	1		1			1	1	
☑ Benzo(a)pyrene	0	0		0.2197	1		1			1	1	
☑ Benzo(b)fluoranthene	0	0		0.050518	1		1			1	1	
☑ Benzo(k)fluoranthene	0	0		0.05778	1		1			1	1	
☑ Benzo(a)anthracene	0	0		0.174746	1		1			1	1	
☑ Benzo(g,h,i)perylene	0	0		0.010634	1		1			1	1	
☑ Chrysene	0	0		0.0234	1		1			1	1	
☑ Fluorene	0	0		47.84	1		1			1	1	3.98
☑ Fluoranthene	0	0		5.200182	1		1			1	1	
☑ Naphthalene	0	0		210.6	1		1			1	1	16.82
☑ Phenanthrene	0	0		78.00702	1		1			1	1	2.11
☑ Pyrene	0	0		3.90468	1		1			1	1	
User-specified Compounds												
☐ Try this												
☐ Chemical 2												
☐ Chemical 3												
☐ Chemical 4												
☐ Chemical 5												

Note: See Guidance Document or discuss with IDEQ Project Officer for definition of Representative Concentrations
CRF = Concentration Reduction Factor. Refer to Guidance Document for details. Default value = 1

FATE AND TRANSPORT PARAMETERS FOR PATHWAYS

Parameter	Symbol	Units	Tier 1 Default Values	Values Used	Comment
Page 1 of 2					
SITE PARAMETERS:					
Source Area	A	cm^2	2250000	2250000	=Tier 1
Width of Source Area	W	cm	1500	1500	=Tier 1
Depth to Subsurface Soil Sources	Ls	ft	3 or 15	3	=Tier 1
Thickness of Subsurface Soil Source	ds-	ft	6	6	=Tier 1
AMBIENT AIR PARAMETERS:					
Ambient Air Mixing Zone Height	δ_a	cm	200	200	=Tier 1
Wind Speed in Ambient Air Mixing Zone	Ua	cm/s	225	225	=Tier 1
Averaging Time for Vapor Flux - Residential	τ	sec	283800000	283800000	=Tier 1
Averaging Time for Vapor Flux - Commercial	τ	sec	126130000	126130000	=Tier 1
SOIL PARAMETERS:					
Dry Soil Bulk Density	ρ_s	g/cm^3	1.64	1.8	Justification Req'd
Fractional Organic Carbon Content					
Surficial Soil	foc	g-C/g-soil	0.01	0.01	=Tier 1
Subsurface Soil	foc	g-C/g-soil	0.001	0.001	=Tier 1
Thickness of Capillary Fringe	hcapi	cm	5	5	=Tier 1
Thickness of Vadose Zone	hv	cm	variable	19495	Calculated
Total Soil Porosity	θ_T	-	0.38	0.3	Justification Req'd
Volumetric Water Content in Capillary Fringe	θ_{wcap}	-	0.342	0.28	Justification Req'd
Volumetric Water Content in Vadose Zone	θ_{ws}	-	0.21 / 0.26	0.21	=Tier 1
Volumetric Water Content in Foundation/Wall Cracks	θ_{wcrack}	-	0.21 / 0.26	0.21	=Tier 1
Volumetric Air Content in Capillary Fringe	θ_{acap}	-	0.038	0.02	Calculated
Volumetric Air Content in Vadose Zone	θ_{as}	-	0.17 / 0.12	0.09	Calculated
Volumetric Air Content in Foundation/Wall Cracks	θ_{acrack}	-	0.17 / 0.12	0.09	Calculated

FATE AND TRANSPORT PARAMETERS FOR PATHWAYS

Parameter	Symbol	Units	Tier 1 Default Values	Values Used	Comment
Page 2 of 2					
GROUNDWATER PARAMETERS:					
Depth to Groundwater	Lgw	cm	variable	19500	Calculated
Total Soil Porosity in the Saturated Zone	θ_T	-	0.38	0.38	=Tier 1
Dry Soil Bulk Density in the Saturated Zone	ρ_s	g/cm^3	1.64	1.8	Justification Req'd
Fractional Organic Carbon Content in the Sat. Zone	foc	g-C/g-soil	0.001	0.001	=Tier 1
Dispersivities for Groundwater Modeling					
Longitudinal	α_x	cm	variable	304.8	Calculated
Transverse	α_y	cm	variable	101.6	Calculated
Vertical	α_z	cm	variable	15.24	Calculated
Dispersivities for Surface Water Modeling					
Longitudinal	α_x	cm	variable	609.6	Calculated
Transverse	α_y	cm	variable	203.2	Calculated
Vertical	α_z	cm	variable	30.48	Calculated
Groundwater Darcy Velocity	Ugw	cm/year	Zone-specific	585	Zone-specific
Groundwater Mixing Zone Thickness	δ_{gw}	cm	152	152	=Tier 1
Infiltration Rate of Water through Soil	IR	cm/year	Zone-specific	4.3	Zone-specific
ENCLOSED SPACE PARAMETERS:					
Enclosed Space Air Exchange Rate					
Residential	ER	1/sec	0.00014	0.00014	=Tier 1
Commercial	ER	1/sec	0.00023	0.00023	=Tier 1
Enclosed Space Volume/Infiltration Area Ratio					
Residential	Lb	cm	200	200	=Tier 1
Commercial	Lb	cm	300	300	=Tier 1
Enclosed Space Foundation or Wall Thickness					
Residential	Lcrack	cm	15	15	=Tier 1
Commercial	Lcrack	cm	15	15	=Tier 1
Areal Fraction of Cracks in Foundation/Walls					
Residential	η	-	0.01	0.01	=Tier 1
Commercial	η	-	0.01	0.01	=Tier 1

Ref: IDEQ, 1996 RBCA Guidance Document for Petroleum Releases

EXPOSURE PARAMETERS FOR ROUTES OF EXPOSURE

Parameter	Symbol	Units	Tier 1 Default Values	Values Used	Comment
Page 1 of 2					
GLOBAL PARAMETERS:					
Acceptable Risk Level	TR	-	1.00E-06	1.00E-06	=Tier 1
Acceptable Hazard Quotient (Tier 1) / Index (Tier 2)	THQ/THI	-	0.2	1	= Tier 2
Body Weight - Adult	BW	kg	70	70	=Tier 1
Body Weight - Child	BW	kg	35	35	=Tier 1
ROUTE-SPECIFIC PARAMETERS:					
INGESTION OF, DERMAL CONTACT WITH, AND INHALATION OF VAPORS FROM SURFICIAL SOIL					
Exposure Duration:					
Residential - Adult	ED	year	9	9	=Tier 1
Residential - Child	ED	year	9	9	=Tier 1
Commercial	ED	year	4	4	=Tier 1
Exposure Frequency:					
Residential - Adult	EF	day/year	180	180	=Tier 1
Residential - Child	EF	day/year	180	180	=Tier 1
Commercial	EF	day/year	40	40	=Tier 1
Inhalation Rate:					
Residential - Adult	IRa	m^3/day	20	20	=Tier 1
Residential - Child	IRa	m^3/day	15	15	=Tier 1
Commercial	IRa	m^3/day	20	20	=Tier 1
Ingestion Rate:					
Residential - Adult	IRs	mg/day	100	100	=Tier 1
Residential - Child	IRs	mg/day	200	200	=Tier 1
Commercial	IRs	mg/day	50	50	=Tier 1
Soil to Skin Adherence Factor	M	mg/cm^2	1	1	=Tier 1
Skin Surface Area:					
Residential - Adult	SA	cm^2/day	4538	4538	=Tier 1
Residential - Child	SA	cm^2/day	2328	2328	=Tier 1
Commercial	SA	cm^2/day	1815	1815	=Tier 1

EXPOSURE PARAMETERS FOR ROUTES OF EXPOSURE

Parameter	Symbol	Units	Tier 1 Default Values	Values Used	Comment
Page 2 of 2					
INHALATION OF VAPORS FROM SUBSURFACE SOIL AND GROUNDWATER					
Inhalation Rate:					
Residential - Adult	IRa	m^3/day	20	20	=Tier 1
Residential - Child	IRa	m^3/day	15	15	=Tier 1
Commercial	IRa	m^3/day	20	20	=Tier 1
Exposure Duration:					
Residential - Adult	ED	year	9	9	=Tier 1
Residential - Child	ED	year	9	9	=Tier 1
Commercial	ED	year	4	4	=Tier 1
Exposure Frequency:					
Residential - Adult	EF	day/year	350	350	=Tier 1
Residential - Child	EF	day/year	350	350	=Tier 1
Commercial	EF	day/year	250	250	=Tier 1
INGESTION OF GROUNDWATER					
Ingestion Rate:					
Residential - Adult	IRw	L/day	1 4	1 4	=Tier 1
Residential - Child	IRw	L/day	1	1	=Tier 1
Commercial	IRw	L/day	1	1	=Tier 1
Exposure Duration:					
Residential - Adult	ED	year	9	9	=Tier 1
Residential - Child	ED	year	9	9	=Tier 1
Commercial	ED	year	4	4	=Tier 1
Exposure Frequency:					
Residential - Adult	EF	day/year	350	350	=Tier 1
Residential - Child	EF	day/year	350	350	=Tier 1
Commercial	EF	day/year	250	250	=Tier 1

Ref IDEQ. 1996. RBCA Guidance Document for Petroleum Releases

COMPLETE PATHWAY(S) AND ROUTE(S) OF EXPOSURE

Receptor, Source, and Route	Residental (Child and Adult)	Commercial
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)	☐ NO	☐ NO
Subsurface Soil		
Outdoor Inhalation of Volatile Emission	☐ NO	☐ NO
Indoor Inhalation of Volatile Emission	☐ NO	☐ NO
Groundwater		
Outdoor Inhalation of Volatile Emission	☑ YES	☐ NO
Indoor Inhalation of Volatile Emission	☑ YES	☐ NO
Protection of Groundwater	☑ YES	☐ NO
Distance to the Target Well [ft] **100.0**		
Groundwater Class: ○ 1 ◉ 2 ○ 3		
Estimation of groundwater source concentration (choose 1 of the 3 options)		
1. Known Subsurface Soil Conc. and known CRFunsaturated ◉		
2. Specified Loading from an External Model ○		
3. Known On-site (Source) Groundwater Concentration ○		
Protection of Surface Water	☐ NO	
Distance to the Target Surface Water [ft] **200.0**		
Surface Water Class: ◉ Domestic Water Supplies ○ Other		
Estimation of groundwater source concentration (choose 1 of the 3 options)		
1. Known Subsurface Soil Conc. and known CRFunsaturated ◉		
2. Specified Loading from an External Model ○		
3. Known On-site (Source) Groundwater Concentration ○		