PRG calculations based on TEQ fillet target tissue concentrations

Directions: Enter desired target tissue level (TTL) in column D for fillet tissue in terms of dioxin/furan TEQ in mg/kg ww to calculate sediment PI
Sediment PRGs (column BF) are calculated assuming water is equal to background. Cells will indicate "PRG<0" if the contribution of water alor

Chemical Name (Basis of Fillet TTL)	Diet	Dummy values Dioxin/Furan TEQ Fillet TTL (mg/kg ww)	Dioxin/furan congener	Average ratio of congener to TEQ	Surrogate Target Tissue	TTL in terms of Individual DF (FILLET)	Final Target Tissue Units
Dioxin/Furan TEQ (mammals)	multifish fillet	1.0E-06	**123478-HexaCDF**	22%	2.20E-07	2.20E-04	µg/kg ww
Dioxin/Furan TEQ (mammals)	multifish fillet	1.0E-06	**123678-HexaCDD**	66%	6.60E-07	6.60E-04	µg/kg ww
Dioxin/Furan TEQ (mammals)	multifish fillet	1.0E-06	**12378-PentaCDD**	37%	3.70E-07	3.70E-04	µg/kg ww
Dioxin/Furan TEQ (mammals)	multifish fillet	1.0E-06	**23478-PentaCDF**	58%	5.80E-07	5.80E-04	µg/kg ww
Dioxin/Furan TEQ (mammals)	multifish fillet	1.0E-06	**2378-TetraCDF**	92%	9.20E-07	9.20E-04	µg/kg ww
Dioxin/Furan TEQ (mammals)	multifish fillet	1.0E-06	**2378-TetraCDD**	22%	2.20E-07	2.20E-04	µg/kg ww

RGs.
ne results in a tissue concentration greater than the TTL.

In terms of chemical?	Sediment PRG (water = bkgd)	PRG Units	PRG in terms of chemical?
123478-HexaCDF	3.79E-04	µg/kg dw	123478-HexaCDF
123678-HexaCDD	5.41E-02	µg/kg dw	123678-HexaCDD
12378-PentaCDD	4.78E-04	µg/kg dw	12378-PentaCDD
23478-PentaCDF	5.91E-03	µg/kg dw	23478-PentaCDF
2378-TetraCDF	4.18E-02	µg/kg dw	2378-TetraCDF
2378-TetraCDD	PRG<0	µg/kg dw	2378-TetraCDD

Calibrated FWM Equations

vlookup name	Chemical Name	Value Type	PHY	ZOO	BIF	BIC	EIC
1	2	3	4	5	6	7	8
23478-PentaCDF_Sed constant	23478-PentaCDF	Sed constant	0	0	0.0671	0.6245	0.0815
23478-PentaCDF_Water constant	23478-PentaCDF	Water constant	36.89857	62.425	5.6383	23.371	8.0042
123478-HexaCDF_Sed constant	123478-HexaCDF	Sed constant	0	0	0.7973	1.9015	2.5605
123478-HexaCDF_Water constant	123478-HexaCDF	Water constant	45.02754	108.02	82.167	83.344	205.52
123678-HexaCDD_Sed constant	123678-HexaCDD	Sed constant	0	0	0.4091	1.526	1.492
123678-HexaCDD_Water constant	123678-HexaCDD	Water constant	22.54952	101.57	47.316	73.604	130.59
12378-PentaCDD_Sed constant	12378-PentaCDD	Sed constant	0	0	0.757	1.5584	2.0884
12378-PentaCDD_Water constant	12378-PentaCDD	Water constant	40.83666	76.158	68.34	61.552	153.4
2378-TetraCDF _Sed constant	2378-TetraCDF	Sed constant	0	0	0.5698	1.8401	2.113
2378-TetraCDF _Water constant	2378-TetraCDF	Water constant	31.91106	117.41	64.903	87.596	180.93
2378-TetraCDD_Sed constant	2378-TetraCDD	Sed constant	0	0	0.7994	1.809	2.4521
2378-TetraCDD_Water constant	2378-TetraCDD	Water constant	44.73177	98.602	79.377	76.965	192.08

DF / TEQ: Simple ratios	DF / TEQ: Dummy ratios
123478-HexaCDF	22%
123678-HexaCDD	66%
12378-PentaCDD	37%
23478-PentaCDF	58%
2378-TetraCDF	92%
2378-TetraCDD	22%

SCL	LSS	CAR	SMB	NPM
9	10	11	12	13
0.4107	0.217006	0.1959	0.2831	0.2228
23.654	19.05556	15.192	17.506	15.188
1.1972	0.560777	0.4507	0.8572	0.8753
77.647	46.33279	29.488	56.431	60.388
0.0662	0.028879	0.0244	0.026	0.0369
4.6	2.508492	1.558	1.8773	2.7092
2.3565	1.268697	1.0319	2.8311	2.2469
140.3	93.93808	64.217	170.77	141.9
0.1063	0.046065	0.038	0.0438	0.0621
7.2861	4.023964	2.471	3.093	4.5185
2.9248	1.604717	4.3657	3.7958	2.958
185.32	128.7907	282.47	242.82	197.57

1	2	3	4	5	6	7
			Sediment (µg/kg)		Water (ng/L) - filtered	
Chemical	Chemical Group	FWM Chemical?	Site-wide SWAC	Background	Site-wide (calibrated)	Background
23478-PentaCDF	Dioxins/Furans	yes	0.0115		6.4E-06	2.04E-06
123478-HexaCDF	Dioxins/Furans	yes	0.00271	-	1.1E-05	7.23E-06
123678-HexaCDD	Dioxins/Furans	yes	0.0766	-	2.4E-05	1.61E-05
12378-PentaCDD	Dioxins/Furans	yes	0.00025	-	6.9E-06	2.11E-06
2378-TetraCDF	Dioxins/Furans	yes	0.0168	-	7.8E-06	3.75E-06
2378-TetraCDD	Dioxins/Furans	yes	0.0001	-	1.2E-05	3.24E-06

FWM species code	Column number
phy	4
zoo	5
bif	6
bic	7
eic	8
scl	9
lss	10
car	11
smb	12
npm	13

1	2	3	4	5
Revised Chem Name	**EPA Chem Name**	**Smallmouth Bass**	***smb notes***	**Whole b Common Carp**
123478-HexaCDF	-	6.82	*calc'd from empirical data (n =*	1.53
123678-HexaCDD	-	7.67	*calc'd from empirical data (n =*	1.49
12378-PentaCDD	-	6.69	*calc'd from empirical data (n =*	1.43
23478-PentaCDF	-	6.59	*calc'd from empirical data (n =*	1.49
2378-TetraCDF	-	5.68	*calc'd from empirical data (n =*	1.38
2378-TetraCDD	-	6.08	*calc'd from empirical data (n =*	1.35

6	7	8	9	10
ody/Fillet Concentration Ratio				
carp notes	**Brown Bullhead**	*bullhead notes*	**Black Crappie**	*crappie notes*
calc'd from empirical data (n =	1.53	*surrogate = carp*	6.82	*surrogate = bass*
calc'd from empirical data (n =	1.49	*surrogate = carp*	7.67	*surrogate = bass*
calc'd from empirical data (n =	1.43	*surrogate = carp*	6.69	*surrogate = bass*
calc'd from empirical data (n =	1.49	*surrogate = carp*	6.59	*surrogate = bass*
calc'd from empirical data (n =	1.38	*surrogate = carp*	5.68	*surrogate = bass*
calc'd from empirical data (n =	1.35	*surrogate = carp*	6.08	*surrogate = bass*