

Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	570.8972	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	137.5862	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.02
a	0.12735	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.04
b	0.03197	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.09
c	0.71658	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.13
d	7.5547	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.15
e	-0.04084	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.28
f	-2.02198	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.42
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.73
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.92
		5.0	0.47	0.6	7.5	231	2.60617	1.23	1.10
		10.0	0.55	0.7	7.5	231	2.60617	1.44	1.28
		10.0	0.72	0.9	7.5	231	2.60617	1.86	1.64
		10.0	0.88	1.1	7.5	231	2.60617	2.28	2.01
		6.7	1.05	1.2	7.5	231	2.60617	2.70	2.37
		30.0	1.16	1.7	7.5	228	2.61753	2.98	2.61
		30.0	1.66	2.2	7.5	225	2.629	4.17	3.63
		33.3	2.16	2.7	7.5	225	2.629	5.29	4.59
		4.3	2.72	2.8	7.5	225	2.629	6.53	5.65
		26.0	2.79	3.2	7.5	225	2.629	6.69	5.79
		176.4	3.22	6.2	7.5	225	2.629	7.65	6.62
		230.3	6.16	10.0	7.5	225	2.629	14.13	12.18
		189.7	10.00	13.2	7.5	223	2.63671	22.35	19.21
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	24.57
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	38.29
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	54.73
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	69.19
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	81.42
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	91.88
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	92.23
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	92.23
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	92.23
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	92.23

Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	139.17	124.50	124.50	124.50	0.028	-137.6	0.028	0.0
0.02	142.27	121.04	121.02	121.02	0.035	-137.5	0.035	0.1
0.04	145.45	117.67	117.64	117.64	0.067	-137.5	0.067	0.1
0.09	148.70	114.40	114.33	114.33	0.065	-137.4	0.065	0.2
0.13	152.02	111.22	111.12	111.12	0.021	-137.4	0.021	0.2
0.15	155.41	108.12	108.02	108.02	0.206	-137.2	0.206	0.4
0.28	158.88	105.12	104.93	104.93	0.200	-137.0	0.200	0.6
0.42	162.43	102.19	101.93	101.93	0.466	-136.5	0.466	1.1
0.73	166.06	99.35	98.91	98.91	0.282	-136.2	0.282	1.4
0.92	169.77	96.59	96.06	96.06	0.274	-135.9	0.274	1.6
1.10	171.65	95.23	94.62	94.62	0.270	-135.7	0.270	1.9
1.28	171.65	95.23	94.52	94.52	0.540	-135.1	0.540	2.5
1.64	171.65	95.23	94.32	94.32	0.538	-134.6	0.538	3.0
2.01	171.65	95.23	94.12	94.12	0.537	-134.1	0.537	3.5
2.37	171.65	95.23	93.92	93.92	0.359	-133.7	0.359	3.9
2.61	174.90	90.32	88.98	88.98	1.524	-132.2	1.524	5.4
3.63	178.24	85.63	83.88	83.88	1.437	-130.7	1.437	6.8
4.59	178.24	85.63	83.42	83.42	1.586	-129.2	1.586	8.4
5.65	178.24	85.63	82.91	82.91	0.203	-128.9	0.203	8.6
5.79	178.24	85.63	82.84	82.84	1.232	-127.7	1.232	9.9
6.62	178.24	85.63	82.45	82.45	8.301	-119.4	8.301	18.2
12.18	178.24	85.63	79.77	79.77	10.489	-108.9	10.489	28.7
19.21	180.52	82.61	73.82	73.82	7.994	-100.9	7.994	36.7
24.57	206.55	56.49	49.77	49.77	20.458	-80.5	20.458	57.1
38.29	239.24	37.32	31.35	31.35	24.524	-55.9	24.524	81.6
54.73	248.11	33.68	26.25	26.25	21.579	-34.4	21.579	103.2
69.19	257.45	30.34	22.19	22.19	18.239	-16.1	18.239	121.5
81.42	267.31	27.29	18.98	18.98	15.601	-0.5	15.601	137.1
91.88	277.72	24.50	16.40	16.40	67.393	66.9	0.531	137.6
92.23	288.70	21.96	14.94	14.94	61.430	61.4	0.000	137.6
92.23	300.31	19.65	13.61	13.61	55.959	56.0	0.000	137.6
92.23	312.60	17.55	12.37	12.37	50.845	50.8	0.000	137.6
92.23	324.26	15.82	11.32	11.32	46.541	46.5	0.000	137.6

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Ca All Mat
Mass Material (kg)	0.0347001	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	1000000	0.5	0.01	0.0	4.95	231	2.60617	0.01
a	-0.15969	1.0	0.02	0.0	5.25	231	2.60617	0.02
b	-0.04542	1.0	0.03	0.1	5.55	231	2.60617	0.03
c	0.95477	0.3	0.05	0.1	5.85	231	2.60617	0.05
d	5.31705	3.3	0.06	0.1	6.15	231	2.60617	0.05
e	-0.07459	3.3	0.11	0.2	6.45	231	2.60617	0.09
f	-1.10803	8.0	0.17	0.3	6.75	231	2.60617	0.13
		5.0	0.30	0.4	7.05	231	2.60617	0.22
		5.0	0.38	0.5	7.35	231	2.60617	0.26
		5.0	0.47	0.6	7.5	231	2.60617	0.31
		10.0	0.55	0.7	7.5	231	2.60617	0.35
		10.0	0.72	0.9	7.5	231	2.60617	0.43
		10.0	0.88	1.1	7.5	231	2.60617	0.51
		6.7	1.05	1.2	7.5	231	2.60617	0.59
		30.0	1.16	1.7	7.5	228	2.61753	0.65
		30.0	1.66	2.2	7.5	225	2.629	0.90
		33.3	2.16	2.7	7.5	225	2.629	1.17
		4.3	2.72	2.8	7.5	225	2.629	1.46
		26.0	2.79	3.2	7.5	225	2.629	1.50
		176.4	3.22	6.2	7.5	225	2.629	1.72
		230.3	6.16	10.0	7.5	225	2.629	3.23
		189.7	10.00	13.2	7.5	223	2.63671	5.12
		720.0	13.16	25.2	7.5	202.5	2.71834	6.63
		1370.3	25.16	48.0	7.5	181.5	2.80737	13.90
		1440.0	48.00	72.0	7.5	176.5	2.82943	31.74
		1440.0	72.00	96.0	7.5	171.5	2.85185	46.14
		1440.0	96.00	120.0	7.5	166.5	2.87462	57.85
		7200.0	120.00	240.0	7.5	161.5	2.89776	68.21
		7200.0	240.00	360.0	7.5	156.5	2.92127	117.84
		7200.0	360.00	480.0	7.5	151.5	2.94517	117.85
		7200.0	480.00	600.0	7.5	146.5	2.96946	118.18
		7200.0	600.00	720.0	7.5	142	2.99167	133.32

Note= Large mass of element used because no limit to concrete assuming mass is an exposed surface. If concrete in latent debris is being included, a fraction of B2 should be used.

Ca this Mat Only	Ca (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Ca released	Integral kg Ca released
0	0.000	131.04	120.92	120.92	120.92	0.000	-1000000	0.000	0.000
0.00	0.000	126.99	114.85	114.85	114.85	0.000	-1000000	0.000	0.000
0.00	0.000	123.07	109.08	109.08	109.08	0.000	-1000000	0.000	0.000
0.00	0.000	119.27	103.60	103.60	103.60	0.000	-1000000	0.000	0.000
0.00	0.000	115.58	98.40	98.40	98.40	0.000	-1000000	0.000	0.000
0.00	0.000	112.01	93.46	93.46	93.46	0.000	-1000000	0.000	0.000
0.00	0.000	108.55	88.76	88.76	88.76	0.000	-1000000	0.000	0.000
0.00	0.000	105.20	84.31	84.31	84.31	0.000	-1000000	0.000	0.000
0.00	0.000	101.95	80.07	80.07	80.07	0.000	-1000000	0.000	0.000
0.00	0.000	98.80	76.05	76.05	76.05	0.000	-1000000	0.000	0.000
0.00	0.000	97.26	74.12	74.12	74.12	0.000	-1000000	0.000	0.000
0.00	0.000	97.26	74.12	74.12	74.12	0.000	-1000000	0.000	0.000
0.00	0.000	97.26	74.12	74.12	74.12	0.000	-1000000	0.000	0.000
0.00	0.000	97.26	74.12	74.12	74.12	0.000	-1000000	0.000	0.000
0.00	0.000	97.26	74.12	74.12	74.12	0.000	-1000000	0.000	0.000
0.00	0.000	99.72	72.00	72.00	72.00	0.000	-1000000	0.000	0.000
0.00	0.000	102.27	69.92	69.92	69.92	0.000	-1000000	0.000	0.000
0.00	0.000	102.27	69.92	69.92	69.92	0.000	-1000000	0.000	0.000
0.00	0.000	102.27	69.92	69.92	69.92	0.000	-1000000	0.000	0.000
0.00	0.000	102.27	69.92	69.92	69.92	0.000	-1000000	0.000	0.000
0.00	0.001	102.27	69.92	69.92	69.92	0.001	-1000000	0.001	0.001
0.00	0.001	104.02	68.56	68.56	68.56	0.000	-1000000	0.000	0.002
0.00	0.001	124.46	55.67	55.67	55.67	0.001	-1000000	0.001	0.003
0.00	0.002	151.37	44.36	44.36	44.36	0.002	-1000000	0.002	0.005
0.00	0.004	158.90	41.93	41.93	41.93	0.002	-1000000	0.002	0.008
0.01	0.005	166.92	39.60	39.60	39.60	0.002	-1000000	0.002	0.010
0.01	0.006	175.49	37.36	37.36	37.36	0.002	-1000000	0.002	0.011
0.01	0.008	184.65	35.22	35.22	35.22	0.009	-1000000	0.009	0.020
0.01	0.014	194.45	33.17	33.17	33.17	0.008	-1000000	0.008	0.028
0.02	0.019	204.94	31.21	31.21	31.21	0.008	-1000000	0.008	0.036
0.02	0.024	216.18	29.33	29.33	29.33	0.007	-1000000	0.007	0.044
0.03	0.029	227.00	27.72	27.71	27.71	0.007	-1000000	0.007	0.051

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	0.0347001	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	1000000	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.00
a	1.05597	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.00
b	0.01483	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.00
c	0.11862	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.00
d	3.50061	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.00
e	-0.01713	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.00
f	-0.74261	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.00
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.00
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.00
		5.0	0.47	0.6	7.5	231	2.60617	1.23	0.00
		10.0	0.55	0.7	7.5	231	2.60617	1.44	0.00
		10.0	0.72	0.9	7.5	231	2.60617	1.86	0.00
		10.0	0.88	1.1	7.5	231	2.60617	2.28	0.00
		6.7	1.05	1.2	7.5	231	2.60617	2.70	0.00
		30.0	1.16	1.7	7.5	228	2.61753	2.98	0.00
		30.0	1.66	2.2	7.5	225	2.629	4.17	0.00
		33.3	2.16	2.7	7.5	225	2.629	5.29	0.00
		4.3	2.72	2.8	7.5	225	2.629	6.53	0.00
		26.0	2.79	3.2	7.5	225	2.629	6.69	0.00
		176.4	3.22	6.2	7.5	225	2.629	7.65	0.00
		230.3	6.16	10.0	7.5	225	2.629	14.13	0.00
		189.7	10.00	13.2	7.5	223	2.63671	22.35	0.00
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	0.00
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	0.00
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	0.00
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	0.00
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	0.00
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	0.00
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	0.01
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	0.01
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	0.01
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	0.01

Note= Large mass of element used because no limit to concrete assuming mass is an exposed surface. If concrete in latent debris is being included, a fraction of B2 should be used.

Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	27.17	30.59	30.59	30.59	0.000	-1000000	0.000	0.00
0.00	27.45	30.23	30.23	30.23	0.000	-1000000	0.000	0.00
0.00	27.73	29.88	29.88	29.88	0.000	-1000000	0.000	0.00
0.00	28.02	29.52	29.52	29.52	0.000	-1000000	0.000	0.00
0.00	28.31	29.18	29.18	29.18	0.000	-1000000	0.000	0.00
0.00	28.60	28.83	28.83	28.83	0.000	-1000000	0.000	0.00
0.00	28.89	28.49	28.49	28.49	0.000	-1000000	0.000	0.00
0.00	29.19	28.16	28.16	28.16	0.000	-1000000	0.000	0.00
0.00	29.49	27.83	27.83	27.83	0.000	-1000000	0.000	0.00
0.00	29.79	27.50	27.50	27.50	0.000	-1000000	0.000	0.00
0.00	29.95	27.34	27.34	27.34	0.000	-1000000	0.000	0.00
0.00	29.95	27.34	27.34	27.34	0.000	-1000000	0.000	0.00
0.00	29.95	27.34	27.34	27.34	0.000	-1000000	0.000	0.00
0.00	29.95	27.34	27.34	27.34	0.000	-1000000	0.000	0.00
0.00	29.95	27.34	27.34	27.34	0.000	-1000000	0.000	0.00
0.00	30.04	26.81	26.81	26.81	0.000	-1000000	0.000	0.00
0.00	30.13	26.29	26.29	26.29	0.000	-1000000	0.000	0.00
0.00	30.13	26.29	26.29	26.29	0.000	-1000000	0.000	0.00
0.00	30.13	26.29	26.29	26.29	0.000	-1000000	0.000	0.00
0.00	30.13	26.29	26.29	26.29	0.000	-1000000	0.000	0.00
0.00	30.13	26.29	26.29	26.29	0.000	-1000000	0.000	0.00
0.00	30.13	26.29	26.29	26.29	0.000	-1000000	0.000	0.00
0.00	30.20	25.95	25.95	25.95	0.000	-1000000	0.000	0.00
0.00	30.88	22.57	22.57	22.57	0.001	-1000000	0.001	0.00
0.00	31.64	19.38	19.38	19.38	0.001	-1000000	0.001	0.00
0.00	31.83	18.66	18.66	18.66	0.001	-1000000	0.001	0.00
0.00	32.02	17.96	17.96	17.96	0.001	-1000000	0.001	0.00
0.00	32.22	17.27	17.27	17.27	0.001	-1000000	0.001	0.00
0.00	32.43	16.60	16.60	16.60	0.004	-1000000	0.004	0.01
0.01	32.64	15.95	15.95	15.95	0.004	-1000000	0.004	0.01
0.01	32.85	15.31	15.31	15.31	0.004	-1000000	0.004	0.02
0.01	33.07	14.69	14.68	14.68	0.004	-1000000	0.004	0.02
0.01	33.27	14.14	14.14	14.14	0.004	-1000000	0.004	0.02



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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	AI All Mat
Mass Material (kg)	0.0347001	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	1000000	0.5	0.01	0.0	4.95	231	2.60617	0.00
a	2.35338	1.0	0.02	0.0	5.25	231	2.60617	0.00
b	0.06829	1.0	0.03	0.1	5.55	231	2.60617	0.00
c	-0.70953	0.3	0.05	0.1	5.85	231	2.60617	0.01
d	9.23778	3.3	0.06	0.1	6.15	231	2.60617	0.01
e	0.05404	3.3	0.11	0.2	6.45	231	2.60617	0.01
f	-3.34577	8.0	0.17	0.3	6.75	231	2.60617	0.02
		5.0	0.30	0.4	7.05	231	2.60617	0.04
		5.0	0.38	0.5	7.35	231	2.60617	0.05
		5.0	0.47	0.6	7.5	231	2.60617	0.07
		10.0	0.55	0.7	7.5	231	2.60617	0.09
		10.0	0.72	0.9	7.5	231	2.60617	0.12
		10.0	0.88	1.1	7.5	231	2.60617	0.16
		6.7	1.05	1.2	7.5	231	2.60617	0.19
		30.0	1.16	1.7	7.5	228	2.61753	0.23
		30.0	1.66	2.2	7.5	225	2.629	0.64
		33.3	2.16	2.7	7.5	225	2.629	1.01
		4.3	2.72	2.8	7.5	225	2.629	1.36
		26.0	2.79	3.2	7.5	225	2.629	1.40
		176.4	3.22	6.2	7.5	225	2.629	1.61
		230.3	6.16	10.0	7.5	225	2.629	2.88
		189.7	10.00	13.2	7.5	223	2.63671	4.35
		720.0	13.16	25.2	7.5	202.5	2.71834	4.82
		1370.3	25.16	48.0	7.5	181.5	2.80737	5.75
		1440.0	48.00	72.0	7.5	176.5	2.82943	6.59
		1440.0	72.00	96.0	7.5	171.5	2.85185	7.34
		1440.0	96.00	120.0	7.5	166.5	2.87462	7.95
		7200.0	120.00	240.0	7.5	161.5	2.89776	8.46
		7200.0	240.00	360.0	7.5	156.5	2.92127	10.54
		7200.0	360.00	480.0	7.5	151.5	2.94517	12.24
		7200.0	480.00	600.0	7.5	146.5	2.96946	13.62
		7200.0	600.00	720.0	7.5	142	2.99167	14.73

Note= Large mass of element used because no limit to concrete assuming mass is an exposed surface. If concrete in latent debris is being included, a fraction of B2 should be used.

Al this Mat Only	Al (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Al released	Integral kg Al released
0	0.00	6.63	5.88	5.88	5.88	0.000	-1000000	0.000	0.00
0.00	0.00	6.95	6.10	6.10	6.10	0.000	-1000000	0.000	0.00
0.00	0.00	7.29	6.34	6.34	6.34	0.000	-1000000	0.000	0.00
0.00	0.00	7.64	6.58	6.58	6.58	0.000	-1000000	0.000	0.00
0.00	0.00	8.01	6.83	6.83	6.83	0.000	-1000000	0.000	0.00
0.00	0.00	8.40	7.09	7.09	7.09	0.000	-1000000	0.000	0.00
0.00	0.00	8.80	7.36	7.36	7.36	0.000	-1000000	0.000	0.00
0.00	0.00	9.23	7.64	7.64	7.64	0.000	-1000000	0.000	0.00
0.00	0.00	9.68	7.93	7.93	7.93	0.000	-1000000	0.000	0.00
0.00	0.00	10.14	8.23	8.23	8.23	0.000	-1000000	0.000	0.00
0.00	0.00	10.38	8.38	8.38	8.38	0.000	-1000000	0.000	0.00
0.00	0.00	10.38	8.38	8.38	8.38	0.000	-1000000	0.000	0.00
0.00	0.00	10.38	8.38	8.38	8.38	0.000	-1000000	0.000	0.00
0.00	0.00	10.38	8.38	8.38	8.38	0.000	-1000000	0.000	0.00
0.00	0.00	10.38	8.38	8.38	8.38	0.000	-1000000	0.000	0.00
0.00	0.00	10.19	7.68	7.68	7.68	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	10.00	7.03	7.03	7.03	0.000	-1000000	0.000	0.00
0.00	0.00	9.88	6.63	6.63	6.63	0.000	-1000000	0.000	0.00
0.00	0.00	8.65	3.53	3.53	3.53	0.000	-1000000	0.000	0.00
0.00	0.00	7.48	1.78	1.78	1.78	0.000	-1000000	0.000	0.00
0.00	0.00	7.21	1.50	1.50	1.50	0.000	-1000000	0.000	0.00
0.00	0.00	6.95	1.26	1.26	1.26	0.000	-1000000	0.000	0.00
0.00	0.00	6.70	1.06	1.06	1.06	0.000	-1000000	0.000	0.00
0.00	0.00	6.45	0.89	0.89	0.89	0.000	-1000000	0.000	0.00
0.00	0.00	6.21	0.74	0.74	0.74	0.000	-1000000	0.000	0.00
0.00	0.00	5.97	0.62	0.62	0.62	0.000	-1000000	0.000	0.00
0.00	0.00	5.74	0.51	0.51	0.51	0.000	-1000000	0.000	0.00
0.00	0.00	5.53	0.43	0.43	0.43	0.000	-1000000	0.000	0.00

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Ca All Mat
Mass Material (kg)	86.3648734	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	1.86548127	0.5	0.01	0.0	4.95	231	2.60617	0.01
a	1.82949	1.0	0.02	0.0	5.25	231	2.60617	0.02
b	0.06821	1.0	0.03	0.1	5.55	231	2.60617	0.03
c	-0.47088	0.3	0.05	0.1	5.85	231	2.60617	0.05
d	3.67611	3.3	0.06	0.1	6.15	231	2.60617	0.05
e	0.02616	3.3	0.11	0.2	6.45	231	2.60617	0.09
f	-0.96191	8.0	0.17	0.3	6.75	231	2.60617	0.13
		5.0	0.30	0.4	7.05	231	2.60617	0.22
		5.0	0.38	0.5	7.35	231	2.60617	0.26
		5.0	0.47	0.6	7.5	231	2.60617	0.31
		10.0	0.55	0.7	7.5	231	2.60617	0.35
		10.0	0.72	0.9	7.5	231	2.60617	0.43
		10.0	0.88	1.1	7.5	231	2.60617	0.51
		6.7	1.05	1.2	7.5	231	2.60617	0.59
		30.0	1.16	1.7	7.5	228	2.61753	0.65
		30.0	1.66	2.2	7.5	225	2.629	0.90
		33.3	2.16	2.7	7.5	225	2.629	1.17
		4.3	2.72	2.8	7.5	225	2.629	1.46
		26.0	2.79	3.2	7.5	225	2.629	1.50
		176.4	3.22	6.2	7.5	225	2.629	1.72
		230.3	6.16	10.0	7.5	225	2.629	3.23
		189.7	10.00	13.2	7.5	223	2.63671	5.12
		720.0	13.16	25.2	7.5	202.5	2.71834	6.63
		1370.3	25.16	48.0	7.5	181.5	2.80737	13.90
		1440.0	48.00	72.0	7.5	176.5	2.82943	31.74
		1440.0	72.00	96.0	7.5	171.5	2.85185	46.14
		1440.0	96.00	120.0	7.5	166.5	2.87462	57.85
		7200.0	120.00	240.0	7.5	161.5	2.89776	68.21
		7200.0	240.00	360.0	7.5	156.5	2.92127	117.84
		7200.0	360.00	480.0	7.5	151.5	2.94517	117.85
		7200.0	480.00	600.0	7.5	146.5	2.96946	118.18
		7200.0	600.00	720.0	7.5	142	2.99167	133.32

Ca this Mat Only	Ca (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Ca released	Integral kg Ca released
0	0.00	8.31	19.54	19.54	19.54	0.001	-2	0.001	0.00
0.00	0.00	8.71	19.89	19.89	19.89	0.001	-2	0.001	0.00
0.00	0.00	9.13	20.26	20.25	20.25	0.002	-2	0.002	0.00
0.00	0.00	9.57	20.63	20.62	20.62	0.002	-2	0.002	0.01
0.00	0.00	10.03	21.00	20.99	20.99	0.001	-2	0.001	0.01
0.00	0.00	10.51	21.38	21.38	21.38	0.006	-2	0.006	0.01
0.01	0.01	11.02	21.77	21.76	21.76	0.006	-2	0.006	0.02
0.01	0.01	11.55	22.17	22.15	22.15	0.015	-2	0.015	0.03
0.02	0.02	12.11	22.58	22.53	22.53	0.010	-2	0.010	0.04
0.03	0.03	12.70	22.99	22.94	22.94	0.010	-2	0.010	0.05
0.04	0.04	13.00	23.20	23.13	23.13	0.010	-2	0.010	0.06
0.04	0.04	13.00	23.20	23.12	23.12	0.020	-2	0.020	0.08
0.06	0.06	13.00	23.20	23.10	23.10	0.020	-2	0.020	0.10
0.07	0.07	13.00	23.20	23.07	23.07	0.020	-2	0.020	0.12
0.08	0.08	13.00	23.20	23.05	23.05	0.013	-2	0.013	0.14
0.09	0.09	12.84	22.62	22.46	22.46	0.058	-2	0.058	0.19
0.13	0.13	12.68	22.05	21.83	21.83	0.057	-2	0.057	0.25
0.17	0.17	12.68	22.05	21.76	21.76	0.063	-2	0.063	0.31
0.21	0.21	12.68	22.05	21.69	21.69	0.008	-2	0.008	0.32
0.22	0.22	12.68	22.05	21.68	21.68	0.049	-1	0.049	0.37
0.25	0.25	12.68	22.05	21.62	21.62	0.329	-1	0.329	0.70
0.47	0.47	12.68	22.05	21.24	21.24	0.422	-1	0.422	1.12
0.75	0.75	12.57	21.68	20.38	20.38	0.334	0	0.334	1.46
0.98	0.98	11.51	18.09	16.56	16.56	1.030	1	0.410	1.87
1.25	1.25	10.45	14.86	13.08	13.08	1.548	2	0.000	1.87
1.25	1.25	10.20	14.15	12.41	12.41	1.544	2	0.000	1.87
1.25	1.25	9.96	13.46	11.77	11.77	1.464	1	0.000	1.87
1.25	1.25	9.72	12.80	11.15	11.15	1.387	1	0.000	1.87
1.25	1.25	9.47	12.16	10.55	10.55	6.563	7	0.000	1.87
1.25	1.25	9.24	11.54	9.98	9.98	6.206	6	0.000	1.87
1.25	1.25	9.00	10.95	9.43	9.43	5.862	6	0.000	1.87
1.25	1.25	8.77	10.37	8.89	8.89	5.531	6	0.000	1.87
1.25	1.25	8.56	9.88	8.43	8.43	5.244	5	0.000	1.87

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	86.364873	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	16.936152	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.00
a	5.20122	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.00
b	0.10404	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.00
c	-1.50553	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.01
d	7.46511	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.01
e	0.16247	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.02
f	-2.55813	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.03
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.07
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.10
		5.0	0.47	0.6	7.5	231	2.60617	1.23	0.12
		10.0	0.55	0.7	7.5	231	2.60617	1.44	0.15
		10.0	0.72	0.9	7.5	231	2.60617	1.86	0.21
		10.0	0.88	1.1	7.5	231	2.60617	2.28	0.27
		6.7	1.05	1.2	7.5	231	2.60617	2.70	0.33
		30.0	1.16	1.7	7.5	228	2.61753	2.98	0.37
		30.0	1.66	2.2	7.5	225	2.629	4.17	0.54
		33.3	2.16	2.7	7.5	225	2.629	5.29	0.70
		4.3	2.72	2.8	7.5	225	2.629	6.53	0.87
		26.0	2.79	3.2	7.5	225	2.629	6.69	0.90
		176.4	3.22	6.2	7.5	225	2.629	7.65	1.03
		230.3	6.16	10.0	7.5	225	2.629	14.13	1.95
		189.7	10.00	13.2	7.5	223	2.63671	22.35	3.14
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	4.06
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	6.18
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	8.43
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	10.38
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	11.35
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	11.35
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	11.35
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	11.35
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	11.35
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	11.35



Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	57.72	35.78	35.78	35.78	0.001	-17	0.001	0.00
0.00	62.02	40.03	40.03	40.03	0.002	-17	0.002	0.00
0.00	66.65	44.79	44.79	44.79	0.004	-17	0.004	0.01
0.00	71.61	50.11	50.11	50.11	0.004	-17	0.004	0.01
0.01	76.95	56.06	56.05	56.05	0.002	-17	0.002	0.01
0.01	82.68	62.72	62.71	62.71	0.018	-17	0.018	0.03
0.02	88.84	70.17	70.15	70.15	0.020	-17	0.020	0.05
0.03	95.46	78.50	78.47	78.47	0.054	-17	0.054	0.11
0.07	102.58	87.82	87.76	87.76	0.038	-17	0.038	0.14
0.10	110.22	98.26	98.17	98.17	0.042	-17	0.042	0.19
0.12	114.25	103.93	103.81	103.81	0.045	-17	0.045	0.23
0.15	114.25	103.93	103.79	103.79	0.090	-17	0.090	0.32
0.21	114.25	103.93	103.73	103.73	0.090	-17	0.090	0.41
0.27	114.25	103.93	103.68	103.68	0.090	-16	0.090	0.50
0.33	114.25	103.93	103.62	103.62	0.060	-16	0.060	0.56
0.37	109.84	97.19	96.86	96.86	0.251	-16	0.251	0.81
0.54	105.55	90.85	90.38	90.38	0.234	-16	0.234	1.04
0.70	105.55	90.85	90.24	90.24	0.260	-16	0.260	1.30
0.87	105.55	90.85	90.09	90.09	0.033	-16	0.033	1.34
0.90	105.55	90.85	90.07	90.07	0.203	-15	0.203	1.54
1.03	105.55	90.85	89.96	89.96	1.370	-14	1.370	2.91
1.95	105.55	90.85	89.17	89.17	1.774	-12	1.774	4.68
3.14	102.77	86.82	84.16	84.16	1.379	-11	1.379	6.06
4.06	77.44	53.68	50.86	50.86	3.163	-8	3.163	9.22
6.18	56.88	31.77	28.32	28.32	3.351	-4	3.351	12.58
8.43	52.69	27.90	23.43	23.43	2.914	-1	2.914	15.49
10.38	48.75	24.45	19.24	19.24	2.393	1	1.446	16.94
11.35	45.05	21.38	15.99	15.99	1.989	2	0.000	16.94
11.35	41.58	18.65	13.56	13.56	8.433	8	0.000	16.94
11.35	38.32	16.24	11.43	11.43	7.108	7	0.000	16.94
11.35	35.28	14.11	9.57	9.57	5.950	6	0.000	16.94
11.35	32.43	12.23	7.95	7.95	4.941	5	0.000	16.94
11.35	30.02	10.73	6.67	6.67	4.149	4	0.000	16.94

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	AI All Mat
Mass Material (kg)	86.3648734	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	1.68411503	0.5	0.01	0.0	4.95	231	2.60617	0.00
a	3.72351	1.0	0.02	0.0	5.25	231	2.60617	0.00
b	0.14041	1.0	0.03	0.1	5.55	231	2.60617	0.00
c	-1.69396	0.3	0.05	0.1	5.85	231	2.60617	0.01
d	10.35371	3.3	0.06	0.1	6.15	231	2.60617	0.01
e	0.17064	3.3	0.11	0.2	6.45	231	2.60617	0.01
f	-4.17804	8.0	0.17	0.3	6.75	231	2.60617	0.02
		5.0	0.30	0.4	7.05	231	2.60617	0.04
		5.0	0.38	0.5	7.35	231	2.60617	0.05
		5.0	0.47	0.6	7.5	231	2.60617	0.07
		10.0	0.55	0.7	7.5	231	2.60617	0.09
		10.0	0.72	0.9	7.5	231	2.60617	0.12
		10.0	0.88	1.1	7.5	231	2.60617	0.16
		6.7	1.05	1.2	7.5	231	2.60617	0.19
		30.0	1.16	1.7	7.5	228	2.61753	0.23
		30.0	1.66	2.2	7.5	225	2.629	0.64
		33.3	2.16	2.7	7.5	225	2.629	1.01
		4.3	2.72	2.8	7.5	225	2.629	1.36
		26.0	2.79	3.2	7.5	225	2.629	1.40
		176.4	3.22	6.2	7.5	225	2.629	1.61
		230.3	6.16	10.0	7.5	225	2.629	2.88
		189.7	10.00	13.2	7.5	223	2.63671	4.35
		720.0	13.16	25.2	7.5	202.5	2.71834	4.82
		1370.3	25.16	48.0	7.5	181.5	2.80737	5.75
		1440.0	48.00	72.0	7.5	176.5	2.82943	6.59
		1440.0	72.00	96.0	7.5	171.5	2.85185	7.34
		1440.0	96.00	120.0	7.5	166.5	2.87462	7.95
		7200.0	120.00	240.0	7.5	161.5	2.89776	8.46
		7200.0	240.00	360.0	7.5	156.5	2.92127	10.54
		7200.0	360.00	480.0	7.5	151.5	2.94517	12.24
		7200.0	480.00	600.0	7.5	146.5	2.96946	13.62
		7200.0	600.00	720.0	7.5	142	2.99167	14.73

Al this Mat Only	Al (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Al released	Integral kg Al released
0	0.00	0.92	1.81	1.81	1.81	0.000	-2	0.000	0.000
0.00	0.00	1.01	2.04	2.04	2.04	0.000	-2	0.000	0.000
0.00	0.00	1.11	2.30	2.30	2.30	0.000	-2	0.000	0.000
0.00	0.00	1.22	2.58	2.58	2.58	0.000	-2	0.000	0.001
0.00	0.00	1.35	2.91	2.91	2.91	0.000	-2	0.000	0.001
0.00	0.00	1.49	3.27	3.27	3.27	0.001	-2	0.001	0.002
0.00	0.00	1.64	3.68	3.68	3.68	0.001	-2	0.001	0.003
0.00	0.00	1.81	4.14	4.13	4.13	0.003	-2	0.003	0.006
0.00	0.00	1.99	4.66	4.65	4.65	0.002	-2	0.002	0.008
0.01	0.01	2.19	5.24	5.23	5.23	0.002	-2	0.002	0.010
0.01	0.01	2.30	5.56	5.54	5.54	0.002	-2	0.002	0.012
0.01	0.01	2.30	5.56	5.54	5.54	0.005	-2	0.005	0.017
0.01	0.01	2.30	5.56	5.53	5.53	0.005	-2	0.005	0.022
0.01	0.01	2.30	5.56	5.52	5.52	0.005	-2	0.005	0.026
0.02	0.02	2.30	5.56	5.51	5.51	0.003	-2	0.003	0.030
0.02	0.02	2.20	4.98	4.94	4.94	0.013	-2	0.013	0.042
0.03	0.03	2.10	4.46	4.40	4.40	0.011	-2	0.011	0.054
0.04	0.04	2.10	4.46	4.38	4.38	0.013	-2	0.013	0.066
0.04	0.04	2.10	4.46	4.37	4.37	0.002	-2	0.002	0.068
0.05	0.05	2.10	4.46	4.36	4.36	0.010	-2	0.010	0.078
0.05	0.05	2.10	4.46	4.35	4.35	0.066	-2	0.066	0.144
0.10	0.10	2.10	4.46	4.26	4.26	0.085	-1	0.085	0.229
0.15	0.15	2.04	4.14	3.83	3.83	0.063	-1	0.063	0.292
0.20	0.20	1.49	1.89	1.64	1.64	0.102	-1	0.102	0.394
0.26	0.26	1.05	0.80	0.60	0.60	0.071	-1	0.071	0.465
0.31	0.31	0.96	0.65	0.44	0.44	0.055	-1	0.055	0.519
0.35	0.35	0.88	0.52	0.32	0.32	0.039	-1	0.039	0.559
0.37	0.37	0.81	0.42	0.23	0.23	0.028	-1	0.028	0.587
0.39	0.39	0.74	0.34	0.16	0.16	0.098	-1	0.098	0.684
0.46	0.46	0.67	0.27	0.09	0.09	0.053	-1	0.053	0.737
0.49	0.49	0.61	0.21	0.04	0.04	0.026	-1	0.026	0.763
0.51	0.51	0.56	0.17	0.01	0.01	0.009	-1	0.009	0.772
0.52	0.52	0.51	0.14	0.00	0.00	0.000	-1	0.000	0.772

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.00
a	1.17043	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.00
b	0.10511	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.00
c	-0.07315	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.00
d	7.41106	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.00
e	0.17893	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.00
f	-1.93332	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.00
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.00
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.00
		5.0	0.47	0.6	7.5	231	2.60617	1.23	0.00
		10.0	0.55	0.7	7.5	231	2.60617	1.44	0.00
		10.0	0.72	0.9	7.5	231	2.60617	1.86	0.00
		10.0	0.88	1.1	7.5	231	2.60617	2.28	0.00
		6.7	1.05	1.2	7.5	231	2.60617	2.70	0.00
		30.0	1.16	1.7	7.5	228	2.61753	2.98	0.00
		30.0	1.66	2.2	7.5	225	2.629	4.17	0.00
		33.3	2.16	2.7	7.5	225	2.629	5.29	0.00
		4.3	2.72	2.8	7.5	225	2.629	6.53	0.00
		26.0	2.79	3.2	7.5	225	2.629	6.69	0.00
		176.4	3.22	6.2	7.5	225	2.629	7.65	0.00
		230.3	6.16	10.0	7.5	225	2.629	14.13	0.00
		189.7	10.00	13.2	7.5	223	2.63671	22.35	0.00
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	0.00
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	0.00
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	0.00
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	0.00
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	0.00
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	0.00
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	0.00
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	0.00
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	0.00
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	0.00

Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	29.41	1601.52	1601.52	1601.52	0.000	0	0.000	0.000
0.00	31.63	1812.23	1812.23	1812.23	0.000	0	0.000	0.000
0.00	34.01	2050.65	2050.65	2050.65	0.000	0	0.000	0.000
0.00	36.57	2320.44	2320.44	2320.44	0.000	0	0.000	0.000
0.00	39.33	2625.73	2625.73	2625.73	0.000	0	0.000	0.000
0.00	42.29	2971.18	2971.18	2971.18	0.000	0	0.000	0.000
0.00	45.47	3362.08	3362.08	3362.08	0.000	0	0.000	0.000
0.00	48.90	3804.40	3804.40	3804.40	0.000	0	0.000	0.000
0.00	52.58	4304.92	4304.92	4304.92	0.000	0	0.000	0.000
0.00	56.54	4871.30	4871.30	4871.30	0.000	0	0.000	0.000
0.00	58.63	5181.84	5181.84	5181.84	0.000	0	0.000	0.000
0.00	58.63	5181.84	5181.84	5181.84	0.000	0	0.000	0.000
0.00	58.63	5181.84	5181.84	5181.84	0.000	0	0.000	0.000
0.00	58.63	5181.84	5181.84	5181.84	0.000	0	0.000	0.000
0.00	58.63	5181.84	5181.84	5181.84	0.000	0	0.000	0.000
0.00	58.63	5181.84	5181.84	5181.84	0.000	0	0.000	0.000
0.00	58.52	4926.10	4926.10	4926.10	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.40	4680.90	4680.90	4680.90	0.000	0	0.000	0.000
0.00	58.33	4523.13	4523.13	4523.13	0.000	0	0.000	0.000
0.00	57.53	3145.02	3145.02	3145.02	0.000	0	0.000	0.000
0.00	56.68	2115.90	2115.90	2115.90	0.000	0	0.000	0.000
0.00	56.47	1917.95	1917.95	1917.95	0.000	0	0.000	0.000
0.00	56.25	1735.81	1735.81	1735.81	0.000	0	0.000	0.000
0.00	56.04	1568.47	1568.47	1568.47	0.000	0	0.000	0.000
0.00	55.82	1414.95	1414.95	1414.95	0.000	0	0.000	0.000
0.00	55.60	1274.33	1274.33	1274.33	0.000	0	0.000	0.000
0.00	55.38	1145.72	1145.72	1145.72	0.000	0	0.000	0.000
0.00	55.15	1028.28	1028.28	1028.28	0.000	0	0.000	0.000
0.00	54.94	931.48	931.48	931.48	0.000	0	0.000	0.000

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	AI All Mat
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.00
a	5.529	1.0	0.02	0.0	5.25	231	2.60617	0.00
b	0.2401	1.0	0.03	0.1	5.55	231	2.60617	0.00
c	-2.51326	0.3	0.05	0.1	5.85	231	2.60617	0.01
d	8.48062	3.3	0.06	0.1	6.15	231	2.60617	0.01
e	0.20749	3.3	0.11	0.2	6.45	231	2.60617	0.01
f	-3.32039	8.0	0.17	0.3	6.75	231	2.60617	0.02
		5.0	0.30	0.4	7.05	231	2.60617	0.04
		5.0	0.38	0.5	7.35	231	2.60617	0.05
		5.0	0.47	0.6	7.5	231	2.60617	0.07
		10.0	0.55	0.7	7.5	231	2.60617	0.09
		10.0	0.72	0.9	7.5	231	2.60617	0.12
		10.0	0.88	1.1	7.5	231	2.60617	0.16
		6.7	1.05	1.2	7.5	231	2.60617	0.19
		30.0	1.16	1.7	7.5	228	2.61753	0.23
		30.0	1.66	2.2	7.5	225	2.629	0.64
		33.3	2.16	2.7	7.5	225	2.629	1.01
		4.3	2.72	2.8	7.5	225	2.629	1.36
		26.0	2.79	3.2	7.5	225	2.629	1.40
		176.4	3.22	6.2	7.5	225	2.629	1.61
		230.3	6.16	10.0	7.5	225	2.629	2.88
		189.7	10.00	13.2	7.5	223	2.63671	4.35
		720.0	13.16	25.2	7.5	202.5	2.71834	4.82
		1370.3	25.16	48.0	7.5	181.5	2.80737	5.75
		1440.0	48.00	72.0	7.5	176.5	2.82943	6.59
		1440.0	72.00	96.0	7.5	171.5	2.85185	7.34
		1440.0	96.00	120.0	7.5	166.5	2.87462	7.95
		7200.0	120.00	240.0	7.5	161.5	2.89776	8.46
		7200.0	240.00	360.0	7.5	156.5	2.92127	10.54
		7200.0	360.00	480.0	7.5	151.5	2.94517	12.24
		7200.0	480.00	600.0	7.5	146.5	2.96946	13.62
		7200.0	600.00	720.0	7.5	142	2.99167	14.73

Al this Mat Only	Al (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Al released	Integral kg Al released
0	0.00	1.25	6.19	6.19	6.19	0.000	0	0.000	0.000
0.00	0.00	1.47	7.15	7.15	7.15	0.000	0	0.000	0.000
0.00	0.00	1.74	8.25	8.25	8.25	0.000	0	0.000	0.000
0.00	0.00	2.05	9.52	9.52	9.52	0.000	0	0.000	0.000
0.00	0.00	2.42	10.99	10.99	10.99	0.000	0	0.000	0.000
0.00	0.00	2.86	12.68	12.68	12.68	0.000	0	0.000	0.000
0.00	0.00	3.37	14.64	14.64	14.64	0.000	0	0.000	0.000
0.00	0.00	3.98	16.89	16.89	16.89	0.000	0	0.000	0.000
0.00	0.00	4.70	19.50	19.50	19.50	0.000	0	0.000	0.000
0.00	0.00	5.54	22.50	22.50	22.50	0.000	0	0.000	0.000
0.00	0.00	6.02	24.17	24.17	24.17	0.000	0	0.000	0.000
0.00	0.00	6.02	24.17	24.17	24.17	0.000	0	0.000	0.000
0.00	0.00	6.02	24.17	24.17	24.17	0.000	0	0.000	0.000
0.00	0.00	6.02	24.17	24.17	24.17	0.000	0	0.000	0.000
0.00	0.00	6.02	24.17	24.17	24.17	0.000	0	0.000	0.000
0.00	0.00	6.02	24.17	24.17	24.17	0.000	0	0.000	0.000
0.00	0.00	5.64	22.16	22.16	22.16	0.000	0	0.000	0.000
0.00	0.00	5.28	20.30	20.30	20.30	0.000	0	0.000	0.000
0.00	0.00	5.28	20.30	20.30	20.30	0.000	0	0.000	0.000
0.00	0.00	5.28	20.30	20.30	20.30	0.000	0	0.000	0.000
0.00	0.00	5.28	20.30	20.30	20.30	0.000	0	0.000	0.000
0.00	0.00	5.28	20.30	20.30	20.30	0.000	0	0.000	0.000
0.00	0.00	5.28	20.30	20.30	20.30	0.000	0	0.000	0.000
0.00	0.00	5.05	19.14	19.14	19.14	0.000	0	0.000	0.000
0.00	0.00	3.15	10.25	10.25	10.25	0.000	0	0.000	0.000
0.00	0.00	1.88	5.19	5.19	5.19	0.000	0	0.000	0.000
0.00	0.00	1.65	4.39	4.39	4.39	0.000	0	0.000	0.000
0.00	0.00	1.45	3.69	3.69	3.69	0.000	0	0.000	0.000
0.00	0.00	1.27	3.10	3.10	3.10	0.000	0	0.000	0.000
0.00	0.00	1.11	2.60	2.60	2.60	0.000	0	0.000	0.000
0.00	0.00	0.97	2.17	2.17	2.17	0.000	0	0.000	0.000
0.00	0.00	0.85	1.81	1.81	1.81	0.000	0	0.000	0.000
0.00	0.00	0.74	1.50	1.50	1.50	0.000	0	0.000	0.000
0.00	0.00	0.65	1.27	1.27	1.27	0.000	0	0.000	0.000

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.00
a	7.51336	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.00
b	0.18619	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.00
c	-2.89181	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.00
d	7.17588	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.00
e	0.11502	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.00
f	-2.42532	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.00
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.00
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.00
		5.0	0.47	0.6	7.5	231	2.60617	1.23	0.00
		10.0	0.55	0.7	7.5	231	2.60617	1.44	0.00
		10.0	0.72	0.9	7.5	231	2.60617	1.86	0.00
		10.0	0.88	1.1	7.5	231	2.60617	2.28	0.00
		6.7	1.05	1.2	7.5	231	2.60617	2.70	0.00
		30.0	1.16	1.7	7.5	228	2.61753	2.98	0.00
		30.0	1.66	2.2	7.5	225	2.629	4.17	0.00
		33.3	2.16	2.7	7.5	225	2.629	5.29	0.00
		4.3	2.72	2.8	7.5	225	2.629	6.53	0.00
		26.0	2.79	3.2	7.5	225	2.629	6.69	0.00
		176.4	3.22	6.2	7.5	225	2.629	7.65	0.00
		230.3	6.16	10.0	7.5	225	2.629	14.13	0.00
		189.7	10.00	13.2	7.5	223	2.63671	22.35	0.00
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	0.00
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	0.00
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	0.00
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	0.00
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	0.00
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	0.00
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	0.00
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	0.00
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	0.00
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	0.00

Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	6.96	24.54	24.54	24.54	0.000	0	0.000	0.000
0.00	7.92	26.57	26.57	26.57	0.000	0	0.000	0.000
0.00	9.00	28.77	28.77	28.77	0.000	0	0.000	0.000
0.00	10.24	31.15	31.15	31.15	0.000	0	0.000	0.000
0.00	11.64	33.73	33.73	33.73	0.000	0	0.000	0.000
0.00	13.24	36.51	36.51	36.51	0.000	0	0.000	0.000
0.00	15.06	39.53	39.53	39.53	0.000	0	0.000	0.000
0.00	17.12	42.80	42.80	42.80	0.000	0	0.000	0.000
0.00	19.47	46.34	46.34	46.34	0.000	0	0.000	0.000
0.00	22.15	50.18	50.18	50.18	0.000	0	0.000	0.000
0.00	23.62	52.21	52.21	52.21	0.000	0	0.000	0.000
0.00	23.62	52.21	52.21	52.21	0.000	0	0.000	0.000
0.00	23.62	52.21	52.21	52.21	0.000	0	0.000	0.000
0.00	23.62	52.21	52.21	52.21	0.000	0	0.000	0.000
0.00	23.62	52.21	52.21	52.21	0.000	0	0.000	0.000
0.00	21.90	49.00	49.00	49.00	0.000	0	0.000	0.000
0.00	20.29	45.96	45.96	45.96	0.000	0	0.000	0.000
0.00	20.29	45.96	45.96	45.96	0.000	0	0.000	0.000
0.00	20.29	45.96	45.96	45.96	0.000	0	0.000	0.000
0.00	20.29	45.96	45.96	45.96	0.000	0	0.000	0.000
0.00	20.29	45.96	45.96	45.96	0.000	0	0.000	0.000
0.00	20.29	45.96	45.96	45.96	0.000	0	0.000	0.000
0.00	19.27	44.02	44.02	44.02	0.000	0	0.000	0.000
0.00	11.19	27.91	27.91	27.91	0.000	0	0.000	0.000
0.00	6.19	16.97	16.97	16.97	0.000	0	0.000	0.000
0.00	5.34	15.01	15.01	15.01	0.000	0	0.000	0.000
0.00	4.60	13.24	13.24	13.24	0.000	0	0.000	0.000
0.00	3.95	11.66	11.66	11.66	0.000	0	0.000	0.000
0.00	3.39	10.25	10.25	10.25	0.000	0	0.000	0.000
0.00	2.90	8.98	8.98	8.98	0.000	0	0.000	0.000
0.00	2.47	7.86	7.86	7.86	0.000	0	0.000	0.000
0.00	2.10	6.86	6.86	6.86	0.000	0	0.000	0.000
0.00	1.81	6.06	6.06	6.06	0.000	0	0.000	0.000

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Ca All Mat
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.01
a	2.30159	1.0	0.02	0.0	5.25	231	2.60617	0.02
b	0.12022	1.0	0.03	0.1	5.55	231	2.60617	0.03
c	-0.82549	0.3	0.05	0.1	5.85	231	2.60617	0.05
d	1.98549	3.3	0.06	0.1	6.15	231	2.60617	0.05
e	0.09009	3.3	0.11	0.2	6.45	231	2.60617	0.09
f	-0.52443	8.0	0.17	0.3	6.75	231	2.60617	0.13
		5.0	0.30	0.4	7.05	231	2.60617	0.22
		5.0	0.38	0.5	7.35	231	2.60617	0.26
		5.0	0.47	0.6	7.5	231	2.60617	0.31
		10.0	0.55	0.7	7.5	231	2.60617	0.35
		10.0	0.72	0.9	7.5	231	2.60617	0.43
		10.0	0.88	1.1	7.5	231	2.60617	0.51
		6.7	1.05	1.2	7.5	231	2.60617	0.59
		30.0	1.16	1.7	7.5	228	2.61753	0.65
		30.0	1.66	2.2	7.5	225	2.629	0.90
		33.3	2.16	2.7	7.5	225	2.629	1.17
		4.3	2.72	2.8	7.5	225	2.629	1.46
		26.0	2.79	3.2	7.5	225	2.629	1.50
		176.4	3.22	6.2	7.5	225	2.629	1.72
		230.3	6.16	10.0	7.5	225	2.629	3.23
		189.7	10.00	13.2	7.5	223	2.63671	5.12
		720.0	13.16	25.2	7.5	202.5	2.71834	6.63
		1370.3	25.16	48.0	7.5	181.5	2.80737	13.90
		1440.0	48.00	72.0	7.5	176.5	2.82943	31.74
		1440.0	72.00	96.0	7.5	171.5	2.85185	46.14
		1440.0	96.00	120.0	7.5	166.5	2.87462	57.85
		7200.0	120.00	240.0	7.5	161.5	2.89776	68.21
		7200.0	240.00	360.0	7.5	156.5	2.92127	117.84
		7200.0	360.00	480.0	7.5	151.5	2.94517	117.85
		7200.0	480.00	600.0	7.5	146.5	2.96946	118.18
		7200.0	600.00	720.0	7.5	142	2.99167	133.32

Ca this Mat Only	Ca (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Ca released	Integral kg Ca released
0	0.00	5.12	10.91	10.91	10.91	0.000	0	0.000	0.000
0.00	0.00	5.56	11.61	11.61	11.61	0.000	0	0.000	0.000
0.00	0.00	6.04	12.35	12.35	12.35	0.000	0	0.000	0.000
0.00	0.00	6.57	13.14	13.14	13.14	0.000	0	0.000	0.000
0.00	0.00	7.14	13.99	13.99	13.99	0.000	0	0.000	0.000
0.00	0.00	7.75	14.89	14.89	14.89	0.000	0	0.000	0.000
0.00	0.00	8.43	15.84	15.84	15.84	0.000	0	0.000	0.000
0.00	0.00	9.16	16.86	16.86	16.86	0.000	0	0.000	0.000
0.00	0.00	9.95	17.94	17.94	17.94	0.000	0	0.000	0.000
0.00	0.00	10.81	19.09	19.09	19.09	0.000	0	0.000	0.000
0.00	0.00	11.27	19.70	19.70	19.70	0.000	0	0.000	0.000
0.00	0.00	11.27	19.70	19.70	19.70	0.000	0	0.000	0.000
0.00	0.00	11.27	19.70	19.70	19.70	0.000	0	0.000	0.000
0.00	0.00	11.27	19.70	19.70	19.70	0.000	0	0.000	0.000
0.00	0.00	11.27	19.70	19.70	19.70	0.000	0	0.000	0.000
0.00	0.00	11.27	19.70	19.70	19.70	0.000	0	0.000	0.000
0.00	0.00	11.03	19.43	19.43	19.43	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.79	19.16	19.16	19.16	0.000	0	0.000	0.000
0.00	0.00	10.63	18.98	18.98	18.98	0.000	0	0.000	0.000
0.00	0.00	9.11	17.20	17.20	17.20	0.000	0	0.000	0.000
0.00	0.00	7.69	15.45	15.45	15.45	0.000	0	0.000	0.000
0.00	0.00	7.37	15.04	15.04	15.04	0.000	0	0.000	0.000
0.00	0.00	7.06	14.64	14.64	14.64	0.000	0	0.000	0.000
0.00	0.00	6.77	14.24	14.24	14.24	0.000	0	0.000	0.000
0.00	0.00	6.47	13.85	13.85	13.85	0.000	0	0.000	0.000
0.00	0.00	6.19	13.46	13.46	13.46	0.000	0	0.000	0.000
0.00	0.00	5.92	13.08	13.08	13.08	0.000	0	0.000	0.000
0.00	0.00	5.65	12.70	12.70	12.70	0.000	0	0.000	0.000
0.00	0.00	5.42	12.37	12.37	12.37	0.000	0	0.000	0.000



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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	AI All Mat
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.00
a	8.96613	1.0	0.02	0.0	5.25	231	2.60617	0.00
b	0.10871	1.0	0.03	0.1	5.55	231	2.60617	0.00
c	-2.372	0.3	0.05	0.1	5.85	231	2.60617	0.01
d	6.629	3.3	0.06	0.1	6.15	231	2.60617	0.01
e	0.13222	3.3	0.11	0.2	6.45	231	2.60617	0.01
f	-2.57256	8.0	0.17	0.3	6.75	231	2.60617	0.02
		5.0	0.30	0.4	7.05	231	2.60617	0.04
		5.0	0.38	0.5	7.35	231	2.60617	0.05
		5.0	0.47	0.6	7.5	231	2.60617	0.07
		10.0	0.55	0.7	7.5	231	2.60617	0.09
		10.0	0.72	0.9	7.5	231	2.60617	0.12
		10.0	0.88	1.1	7.5	231	2.60617	0.16
		6.7	1.05	1.2	7.5	231	2.60617	0.19
		30.0	1.16	1.7	7.5	228	2.61753	0.23
		30.0	1.66	2.2	7.5	225	2.629	0.64
		33.3	2.16	2.7	7.5	225	2.629	1.01
		4.3	2.72	2.8	7.5	225	2.629	1.36
		26.0	2.79	3.2	7.5	225	2.629	1.40
		176.4	3.22	6.2	7.5	225	2.629	1.61
		230.3	6.16	10.0	7.5	225	2.629	2.88
		189.7	10.00	13.2	7.5	223	2.63671	4.35
		720.0	13.16	25.2	7.5	202.5	2.71834	4.82
		1370.3	25.16	48.0	7.5	181.5	2.80737	5.75
		1440.0	48.00	72.0	7.5	176.5	2.82943	6.59
		1440.0	72.00	96.0	7.5	171.5	2.85185	7.34
		1440.0	96.00	120.0	7.5	166.5	2.87462	7.95
		7200.0	120.00	240.0	7.5	161.5	2.89776	8.46
		7200.0	240.00	360.0	7.5	156.5	2.92127	10.54
		7200.0	360.00	480.0	7.5	151.5	2.94517	12.24
		7200.0	480.00	600.0	7.5	146.5	2.96946	13.62
		7200.0	600.00	720.0	7.5	142	2.99167	14.73

Al this Mat Only	Al (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Al released	Integral kg Al released
0	0.00	1948.98	3.46	3.46	3.46	0.000	0	0.000	0.000
0.00	0.00	2100.98	3.79	3.79	3.79	0.000	0	0.000	0.000
0.00	0.00	2264.82	4.16	4.16	4.16	0.000	0	0.000	0.000
0.00	0.00	2441.45	4.55	4.55	4.55	0.000	0	0.000	0.000
0.00	0.00	2631.84	4.99	4.99	4.99	0.000	0	0.000	0.000
0.00	0.00	2837.09	5.47	5.47	5.47	0.000	0	0.000	0.000
0.00	0.00	3058.34	5.99	5.99	5.99	0.000	0	0.000	0.000
0.00	0.00	3296.85	6.56	6.56	6.56	0.000	0	0.000	0.000
0.00	0.00	3553.96	7.19	7.19	7.19	0.000	0	0.000	0.000
0.00	0.00	3831.11	7.88	7.88	7.88	0.000	0	0.000	0.000
0.00	0.00	3977.70	8.24	8.24	8.24	0.000	0	0.000	0.000
0.00	0.00	3977.70	8.24	8.24	8.24	0.000	0	0.000	0.000
0.00	0.00	3977.70	8.24	8.24	8.24	0.000	0	0.000	0.000
0.00	0.00	3977.70	8.24	8.24	8.24	0.000	0	0.000	0.000
0.00	0.00	3977.70	8.24	8.24	8.24	0.000	0	0.000	0.000
0.00	0.00	3738.20	7.71	7.71	7.71	0.000	0	0.000	0.000
0.00	0.00	3511.22	7.20	7.20	7.20	0.000	0	0.000	0.000
0.00	0.00	3511.22	7.20	7.20	7.20	0.000	0	0.000	0.000
0.00	0.00	3511.22	7.20	7.20	7.20	0.000	0	0.000	0.000
0.00	0.00	3511.22	7.20	7.20	7.20	0.000	0	0.000	0.000
0.00	0.00	3511.22	7.20	7.20	7.20	0.000	0	0.000	0.000
0.00	0.00	3511.22	7.20	7.20	7.20	0.000	0	0.000	0.000
0.00	0.00	3366.58	6.88	6.88	6.88	0.000	0	0.000	0.000
0.00	0.00	2155.58	4.24	4.24	4.24	0.000	0	0.000	0.000
0.00	0.00	1325.50	2.50	2.50	2.50	0.000	0	0.000	0.000
0.00	0.00	1175.01	2.20	2.20	2.20	0.000	0	0.000	0.000
0.00	0.00	1039.62	1.92	1.92	1.92	0.000	0	0.000	0.000
0.00	0.00	918.04	1.68	1.68	1.68	0.000	0	0.000	0.000
0.00	0.00	809.05	1.47	1.47	1.47	0.000	0	0.000	0.000
0.00	0.00	711.54	1.27	1.27	1.27	0.000	0	0.000	0.000
0.00	0.00	624.47	1.11	1.11	1.11	0.000	0	0.000	0.000
0.00	0.00	546.87	0.96	0.96	0.96	0.000	0	0.000	0.000
0.00	0.00	484.40	0.84	0.84	0.84	0.000	0	0.000	0.000

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.00
a	5.95046	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.00
b	0.06796	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.00
c	-1.43151	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.00
d	6.07665	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.00
e	0.16569	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.00
f	-2.17413	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.00
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.00
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.00
		5.0	0.47	0.6	7.5	231	2.60617	1.23	0.00
		10.0	0.55	0.7	7.5	231	2.60617	1.44	0.00
		10.0	0.72	0.9	7.5	231	2.60617	1.86	0.00
		10.0	0.88	1.1	7.5	231	2.60617	2.28	0.00
		6.7	1.05	1.2	7.5	231	2.60617	2.70	0.00
		30.0	1.16	1.7	7.5	228	2.61753	2.98	0.00
		30.0	1.66	2.2	7.5	225	2.629	4.17	0.00
		33.3	2.16	2.7	7.5	225	2.629	5.29	0.00
		4.3	2.72	2.8	7.5	225	2.629	6.53	0.00
		26.0	2.79	3.2	7.5	225	2.629	6.69	0.00
		176.4	3.22	6.2	7.5	225	2.629	7.65	0.00
		230.3	6.16	10.0	7.5	225	2.629	14.13	0.00
		189.7	10.00	13.2	7.5	223	2.63671	22.35	0.00
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	0.00
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	0.00
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	0.00
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	0.00
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	0.00
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	0.00
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	0.00
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	0.00
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	0.00
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	0.00

Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	343.34	15.17	15.17	15.17	0.000	0	0.000	0.000
0.00	359.84	17.01	17.01	17.01	0.000	0	0.000	0.000
0.00	377.14	19.07	19.07	19.07	0.000	0	0.000	0.000
0.00	395.26	21.38	21.38	21.38	0.000	0	0.000	0.000
0.00	414.26	23.98	23.98	23.98	0.000	0	0.000	0.000
0.00	434.17	26.88	26.88	26.88	0.000	0	0.000	0.000
0.00	455.04	30.14	30.14	30.14	0.000	0	0.000	0.000
0.00	476.91	33.80	33.80	33.80	0.000	0	0.000	0.000
0.00	499.84	37.90	37.90	37.90	0.000	0	0.000	0.000
0.00	523.86	42.49	42.49	42.49	0.000	0	0.000	0.000
0.00	536.30	45.00	45.00	45.00	0.000	0	0.000	0.000
0.00	536.30	45.00	45.00	45.00	0.000	0	0.000	0.000
0.00	536.30	45.00	45.00	45.00	0.000	0	0.000	0.000
0.00	536.30	45.00	45.00	45.00	0.000	0	0.000	0.000
0.00	536.30	45.00	45.00	45.00	0.000	0	0.000	0.000
0.00	536.30	45.00	45.00	45.00	0.000	0	0.000	0.000
0.00	516.57	42.51	42.51	42.51	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	497.41	40.14	40.14	40.14	0.000	0	0.000	0.000
0.00	484.94	38.62	38.62	38.62	0.000	0	0.000	0.000
0.00	370.54	25.66	25.66	25.66	0.000	0	0.000	0.000
0.00	276.30	16.43	16.43	16.43	0.000	0	0.000	0.000
0.00	256.92	14.72	14.72	14.72	0.000	0	0.000	0.000
0.00	238.62	13.15	13.15	13.15	0.000	0	0.000	0.000
0.00	221.37	11.74	11.74	11.74	0.000	0	0.000	0.000
0.00	205.11	10.45	10.45	10.45	0.000	0	0.000	0.000
0.00	189.81	9.29	9.29	9.29	0.000	0	0.000	0.000
0.00	175.44	8.24	8.24	8.24	0.000	0	0.000	0.000
0.00	161.94	7.30	7.30	7.30	0.000	0	0.000	0.000
0.00	150.50	6.53	6.53	6.53	0.000	0	0.000	0.000

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Constants	Value	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Ave Interval pH	Ave Temp (F)	1000/T (K <sup>-1</sup> )	Si All Mat	Si this Mat Only
Mass Material (kg)	0	0.4	0.00	0.01	4.65	231	2.60617	0	0
Mass Element (kg)	0	0.5	0.01	0.0	4.95	231	2.60617	0.02	0.00
a	13.60515	1.0	0.02	0.0	5.25	231	2.60617	0.04	0.00
b	0.18354	1.0	0.03	0.1	5.55	231	2.60617	0.09	0.00
c	-3.81145	0.3	0.05	0.1	5.85	231	2.60617	0.14	0.00
d	15.69692	3.3	0.06	0.1	6.15	231	2.60617	0.15	0.00
e	0.34838	3.3	0.11	0.2	6.45	231	2.60617	0.30	0.00
f	-6.05941	8.0	0.17	0.3	6.75	231	2.60617	0.45	0.00
		5.0	0.30	0.4	7.05	231	2.60617	0.80	0.00
		5.0	0.38	0.5	7.35	231	2.60617	1.01	0.00
		5.0	0.47	0.6	7.5	231	2.60617	1.23	0.00
		10.0	0.55	0.7	7.5	231	2.60617	1.44	0.00
		10.0	0.72	0.9	7.5	231	2.60617	1.86	0.00
		10.0	0.88	1.1	7.5	231	2.60617	2.28	0.00
		6.7	1.05	1.2	7.5	231	2.60617	2.70	0.00
		30.0	1.16	1.7	7.5	228	2.61753	2.98	0.00
		30.0	1.66	2.2	7.5	225	2.629	4.17	0.00
		33.3	2.16	2.7	7.5	225	2.629	5.29	0.00
		4.3	2.72	2.8	7.5	225	2.629	6.53	0.00
		26.0	2.79	3.2	7.5	225	2.629	6.69	0.00
		176.4	3.22	6.2	7.5	225	2.629	7.65	0.00
		230.3	6.16	10.0	7.5	225	2.629	14.13	0.00
		189.7	10.00	13.2	7.5	223	2.63671	22.35	0.00
		720.0	13.16	25.2	7.5	202.5	2.71834	28.64	0.00
		1370.3	25.16	48.0	7.5	181.5	2.80737	44.47	0.00
		1440.0	48.00	72.0	7.5	176.5	2.82943	63.16	0.00
		1440.0	72.00	96.0	7.5	171.5	2.85185	79.58	0.00
		1440.0	96.00	120.0	7.5	166.5	2.87462	92.78	0.00
		7200.0	120.00	240.0	7.5	161.5	2.89776	103.23	0.00
		7200.0	240.00	360.0	7.5	156.5	2.92127	103.59	0.00
		7200.0	360.00	480.0	7.5	151.5	2.94517	103.60	0.00
		7200.0	480.00	600.0	7.5	146.5	2.96946	103.60	0.00
		7200.0	600.00	720.0	7.5	142	2.99167	103.60	0.00



Si (ppm)	K	k	R	Positive release rate (mg/kg-min)	interval pred release (kg)	Amount above start Mass	interval kg Si released	Integral kg Si released
0.00	33523.03	33.50	33.50	33.50	0.000	0	0.000	0.000
0.00	38054.44	42.62	42.62	42.62	0.000	0	0.000	0.000
0.00	43198.36	54.21	54.21	54.21	0.000	0	0.000	0.000
0.00	49037.61	68.96	68.96	68.96	0.000	0	0.000	0.000
0.00	55666.17	87.72	87.72	87.72	0.000	0	0.000	0.000
0.00	63190.72	111.59	111.59	111.59	0.000	0	0.000	0.000
0.00	71732.39	141.95	141.95	141.95	0.000	0	0.000	0.000
0.00	81428.66	180.58	180.58	180.58	0.000	0	0.000	0.000
0.00	92435.61	229.71	229.71	229.71	0.000	0	0.000	0.000
0.00	104930.39	292.21	292.21	292.21	0.000	0	0.000	0.000
0.00	111797.55	329.57	329.57	329.57	0.000	0	0.000	0.000
0.00	111797.55	329.57	329.57	329.57	0.000	0	0.000	0.000
0.00	111797.55	329.57	329.57	329.57	0.000	0	0.000	0.000
0.00	111797.55	329.57	329.57	329.57	0.000	0	0.000	0.000
0.00	111797.55	329.57	329.57	329.57	0.000	0	0.000	0.000
0.00	101180.74	281.23	281.23	281.23	0.000	0	0.000	0.000
0.00	91492.11	239.64	239.64	239.64	0.000	0	0.000	0.000
0.00	91492.11	239.64	239.64	239.64	0.000	0	0.000	0.000
0.00	91492.11	239.64	239.64	239.64	0.000	0	0.000	0.000
0.00	91492.11	239.64	239.64	239.64	0.000	0	0.000	0.000
0.00	91492.11	239.64	239.64	239.64	0.000	0	0.000	0.000
0.00	91492.11	239.64	239.64	239.64	0.000	0	0.000	0.000
0.00	85512.06	215.22	215.22	215.22	0.000	0	0.000	0.000
0.00	41773.55	68.91	68.91	68.91	0.000	0	0.000	0.000
0.00	19123.09	19.90	19.90	19.90	0.000	0	0.000	0.000
0.00	15756.51	14.62	14.62	14.62	0.000	0	0.000	0.000
0.00	12942.83	10.70	10.70	10.70	0.000	0	0.000	0.000
0.00	10598.26	7.79	7.79	7.79	0.000	0	0.000	0.000
0.00	8650.52	5.64	5.64	5.64	0.000	0	0.000	0.000
0.00	7037.51	4.06	4.06	4.06	0.000	0	0.000	0.000
0.00	5705.96	2.91	2.91	2.91	0.000	0	0.000	0.000
0.00	4610.38	2.07	2.07	2.07	0.000	0	0.000	0.000
0.00	3793.91	1.52	1.52	1.52	0.000	0	0.000	0.000

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	Elapsed Time (min)	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temperature (F)	1000/T (K <sup>-1</sup> )	1000/T squared	pHa squared	
Area Zn ft2	0.1	0.400	0.00	0.01	5	105	3.1877026	10.16	25.00	
	1	0.500	0.01	0.02	5	105	3.1877026	10.16	25.00	
	1	1.000	0.02	0.03	5	105	3.1877026	10.16	25.00	
199888.7	2	1.000	0.03	0.05	5	105	3.1877026	10.16	25.00	
Mass Zn lbm	3	0.3	0.05	0.06	5	105	3.1877026	10.16	25.00	
	3	3.3	0.06	0.11	5	105	3.1877026	10.16	25.00	
	7	3.3	0.11	0.17	5	105	3.1877026	10.16	25.00	
	10	8.0	0.17	0.30	5	105	3.1877026	10.16	25.00	
	1000000	18	5.0	0.30	0.38	5	105	3.1877026	10.16	25.00
	23	5.0	0.38	0.47	6.25	105	3.1877026	10.16	39.06	
	28	5.0	0.47	0.55	7.5	105	3.1877026	10.16	56.25	
	33	10.0	0.55	0.72	7.5	105	3.1877026	10.16	56.25	
	43	10.0	0.72	0.88	7.5	105	3.1877026	10.16	56.25	
	Mass Zn kg	53	10.0	0.88	1.05	7.5	105	3.1877026	10.16	56.25
453597		63	6.7	1.05	1.16	7.5	146.15	2.9711796	8.83	56.25
70		30.0	1.16	1.66	7.5	186.15	2.7871543	7.77	56.25	
100		30.0	1.66	2.16	7.5	182.5	2.8029961	7.86	56.25	
130		33.3	2.16	2.72	7.5	177.5	2.8249918	7.98	56.25	
163		4.3	2.72	2.79	7.5	172.5	2.8473354	8.11	56.25	
167		26.0	2.79	3.22	7.5	167.5	2.8700352	8.24	56.25	
193		176.4	3.22	6.16	7.5	162.5	2.8931	8.37	56.25	
370		230.3	6.16	10.00	7.5	157.5	2.9165384	8.51	56.25	
600		189.7	10.00	13.16	3.75	77.5	3.3508945	11.23	14.06	
790		720.0	13.16	25.16	0	0	3.9158527	15.33	0.00	
1510		1370.3	25.16	48.00	0	0	3.9158527	15.33	0.00	
2880		1440.0	48.00	72.00	0	0	3.9158527	15.33	0.00	
4320		1440.0	72.00	96.00	0	0	3.9158527	15.33	0.00	
5760		1440.0	96.00	120.00	0	0	3.9158527	15.33	0.00	
7200	7200.0	120.00	240.00	0	0	3.9158527	15.33	0.00		
14400	7200.0	240.00	360.00	0	0	3.9158527	15.33	0.00		
21600	7200.0	360.00	480.00	0	0	3.9158527	15.33	0.00		
28800	7200.0	480.00	600.00	0	0	3.9158527	15.33	0.00		
36000	7200.0	600.00	720.00	0	0	3.9158527	15.33	0.00		



Model term	Value
Intercept	-15.10693334
pHa	-3.670953896
1000/T (K-1)	7.303961651
pHa squared	0.103589245
pHa/(1000/T)	5.485050709



	Elapsed Time (min)	Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temperature (F)	1000/T (K <sup>-1</sup> )	1000/T squared	pHa squared
Area Zn ft2 4121.3	0.1	0.400	0.00	0.01	4.65	231	2.606165	6.79	21.62
	1	0.500	0.01	0.02	4.95	231	2.606165	6.79	24.50
	1	1.000	0.02	0.03	5.25	231	2.606165	6.79	27.56
	2	1.000	0.03	0.05	5.55	231	2.606165	6.79	30.80
	3	0.3	0.05	0.06	5.85	231	2.606165	6.79	34.22
	3	3.3	0.06	0.11	6.15	231	2.606165	6.79	37.82
Mass Zn lbm 10000000	7	3.3	0.11	0.17	6.45	231	2.606165	6.79	41.60
	10	8.0	0.17	0.30	6.75	231	2.606165	6.79	45.56
	18	5.0	0.30	0.38	7.05	231	2.606165	6.79	49.70
	23	5.0	0.38	0.47	7.35	231	2.606165	6.79	54.02
	28	5.0	0.47	0.55	7.5	231	2.606165	6.79	56.25
	33	10.0	0.55	0.72	7.5	231	2.606165	6.79	56.25
	43	10.0	0.72	0.88	7.5	231	2.606165	6.79	56.25
	53	10.0	0.88	1.05	7.5	231	2.606165	6.79	56.25
	63	6.7	1.05	1.16	7.5	231	2.606165	6.79	56.25
	70	30.0	1.16	1.66	7.5	228	2.6175346	6.85	56.25
Mass Zn kg 4535970	100	30.0	1.66	2.16	7.5	225	2.6290038	6.91	56.25
	130	33.3	2.16	2.72	7.5	225	2.6290038	6.91	56.25
	163	4.3	2.72	2.79	7.5	225	2.6290038	6.91	56.25
	167	26.0	2.79	3.22	7.5	225	2.6290038	6.91	56.25
	193	176.4	3.22	6.16	7.5	225	2.6290038	6.91	56.25
	370	230.3	6.16	10.00	7.5	225	2.6290038	6.91	56.25
	600	189.7	10.00	13.16	7.5	223	2.6367059	6.95	56.25
	790	720.0	13.16	25.16	7.5	202.5	2.7183352	7.39	56.25
	1510	1370.3	25.16	48.00	7.5	181.5	2.8073678	7.88	56.25
	2880	1440.0	48.00	72.00	7.5	176.5	2.8294324	8.01	56.25
	4320	1440.0	72.00	96.00	7.5	171.5	2.8518466	8.13	56.25
	5760	1440.0	96.00	120.00	7.5	166.5	2.8746187	8.26	56.25
	7200	7200.0	120.00	240.00	7.5	161.5	2.8977575	8.40	56.25
	14400	7200.0	240.00	360.00	7.5	156.5	2.9212717	8.53	56.25
	21600	7200.0	360.00	480.00	7.5	151.5	2.9451707	8.67	56.25
28800	7200.0	480.00	600.00	7.5	146.5	2.969464	8.82	56.25	
36000	7200.0	600.00	720.00	7.5	142	2.9916732	8.95	56.25	

pHa/(1000/T)	pHa cubed	pHa squared/(1000/T)		log prediction	corrosion rate (mg/m <sup>2</sup> -min)	interval mg Zn released	interval Kg Zn released	Integral kg An released	mass available Integral kg Zn
1.78	100.54	8.30		-1.115084	0.07672122	12	0	0.000	0.000
1.90	121.29	9.40		-1.28664	0.05168443	10	0.000	0.000	0.000
2.01	144.70	10.58		-1.43955	0.03634544	14	0.000	0.000	0.000
2.13	170.95	11.82		-1.573814	0.02668003	10	0.000	0.000	0.000
2.24	200.20	13.13		-1.689431	0.02044413	3	0.000	0.000	0.000
2.36	232.61	14.51		-1.786403	0.01635299	21	0.000	0.000	0.000
2.47	268.34	15.96		-1.864728	0.01365437	17	0.000	0.000	0.000
2.59	307.55	17.48		-1.924408	0.01190124	36	0.000	0.000	0.000
2.71	350.40	19.07		-1.965441	0.01082826	21	0.000	0.000	0.000
2.82	397.07	20.73		-1.987828	0.01028422	20	0.000	0.000	0.000
2.88	421.88	21.58		-1.99203	0.01018521	19	0.000	0.000	0.000
2.88	421.88	21.58		-1.99203	0.01018521	39	0.000	0.000	0.000
2.88	421.88	21.58		-1.99203	0.01018521	39	0.000	0.000	0.000
2.88	421.88	21.58		-1.99203	0.01018521	39	0.000	0.000	0.000
2.88	421.88	21.58		-1.99203	0.01018521	26	0.000	0.000	0.000
2.87	421.88	21.49		-1.97755	0.01053052	121	0.000	0.000	0.000
2.85	421.88	21.40		-1.962343	0.01090579	125	0.000	0.001	0.001
2.85	421.88	21.40		-1.962343	0.01090579	139	0.000	0.001	0.001
2.85	421.88	21.40		-1.962343	0.01090579	18	0.000	0.001	0.001
2.85	421.88	21.40		-1.962343	0.01090579	109	0.000	0.001	0.001
2.85	421.88	21.40		-1.962343	0.01090579	736	0.001	0.002	0.002
2.85	421.88	21.40		-1.962343	0.01090579	962	0.001	0.003	0.003
2.84	421.88	21.33		-1.951796	0.01117389	812	0.001	0.003	0.003
2.76	421.88	20.69		-1.824093	0.01499363	4133	0.004	0.007	0.007
2.67	421.88	20.04		-1.653744	0.02219502	11645	0.012	0.019	0.019
2.65	421.88	19.88		-1.606857	0.02472537	13632	0.014	0.033	0.033
2.63	421.88	19.72		-1.557417	0.0277066	15276	0.015	0.048	0.048
2.61	421.88	19.57		-1.505362	0.03123476	17221	0.017	0.065	0.065
2.59	421.88	19.41		-1.450629	0.03542997	97672	0.098	0.163	0.163
2.57	421.88	19.26		-1.393154	0.04044327	111492	0.111	0.274	0.274
2.55	421.88	19.10		-1.332868	0.04646563	128094	0.128	0.403	0.403
2.53	421.88	18.94		-1.269703	0.05373992	148147	0.148	0.551	0.551
2.51	421.88	18.80		-1.210333	0.06161227	169850	0.170	0.721	0.721

Model term	Value
Intercept	-15.10693334
pHa	-3.670953896
1000/T (K-1)	7.303961651
pHa squared	0.103589245
pHa/(1000/T)	5.485050709

