Attachment 9

CHLE-016:

Calculated Material Release to Estimate Chemical Effects, Revision 3

PROJECT DOCUMENTATION COVER PAGE

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Title: Calculated Material Release to Estimate Chemical Effects		
Project: Corrosion/Head Loss Experiment (CHLE) Program		Date: 2/22/2014
Client: South Texas Project Nuclear Operating Company		

Summary/Purpose of Analysis or Calculation:

Time constraints required calculated values for material release and chemical product formation to be determined for use by CASA. This was done using WCAP-16530-NP material release equations with a wide matrix of conditions and solubility limits calculated using Visual MINTEQ.

None of the material release results obtained from cases evaluated under SBLOCA conditions with nominal temperature profiles produce concentrations that exceeded the solubility limits set for this analysis. However, the cases evaluated under MBLOCA and LBLOCA conditions with nominal temperature profiles did result in material release quantities that produce concentrations that exceed the set limits. Calcium phosphate is the dominant product predicted to exist in solution as a result of the larger break conditions.

Only the 6" break was evaluated with a maximum temperature profile. All cases evaluated using this profile resulted in material release quantities that produce concentrations that exceeds the solubility limits set for this analysis. The dominant product predicted to exist in solution is an aluminum product.

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Revision	Date	Description
1	1/14/2013	Internal Review
2	1/22/2013	Corrections from Oversight Review
3	2/22/2014	Review for NRC submittal

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1.0 Introduction

South Texas Project (STP) is pursuing a risk informed approach to resolve open issues related to Generic Safety Issue (GSI) 191. This approach uses the Containment Accident Stochastic Analysis (CASA) program to determine the probability and quantify uncertainty of the Emergency Core Cooling system (ECCS) pump performance for a full spectrum of Loss of Coolant Accident (LOCA) scenarios. CASA uses best estimate values for multiple parameters to generate these results. Material release and formation of chemical products resulting from a full spectrum of LOCA scenarios are two parameters that must be defined for successful application of CASA. While it is desirable to use a matrix of experimentally obtained values determined from the Chemical Head Loss Experiments (CHLE) test program, time constraints required calculated values for material release and chemical product formation to be obtained for the assessment of head loss bump up factors used by CASA.

2.0 Methods

A spreadsheet that incorporates the WCAP-16530-NP material release equations [1] was used to determine release rates for aluminum (Al), silicon (Si) and calcium (Ca). Although a zinc (Zn) product was observed to form under STP LOCA test conditions, Zn was excluded from the analysis. This exclusion provides conservatism within the obtained results since the presence of zinc material has been shown to markedly decrease actual material release as compared to the predicted release of those included in the analysis [2]. Also, the Zn product was determined to be crystalline and mainly adhere to structures within containment as opposed to traveling readily in solution [2]; therefore the head loss resulting from this product was estimated as a particulate source as opposed to a chemical source. The head loss related to the Zn product and the assessment of bump up factors determined from this analysis are explained elsewhere [3].

To obtain material release (Ca, Si, and Al) for a full spectrum of LOCA scenarios, break sizes were divided into small break (SB), medium break (MB), and large break (LB) LOCA categories. A small break size is any break between 0" inches and 2 inches, a medium break is any break larger than 2 inches up to 6 inches, and a large break is any break greater than 6 inches. The range of water volumes [4]and fiberglass quantities [5, 6] used in this analysis are listed in Table 1. This analysis includes other materials existing at STP at a constant value as listed in Table 2. MELCOR/Relap-5 simulated temperature profiles and pH profiles determined under STP conditions were also used in this analysis [7, 8]. Table 3 provides an overall matrix of conditions evaluated by this approach which are defined as Cases 1-8.

Table 1: Variables used in analyses

Category	Break Size (")	Min Fiberglass (ft^3)	Max Fiberglass (ft^3)	Min Water (L)	Max Water (L)
Small	1.5, 2	0	10	1,775,458	2,149,838
Medium	4, 6	10	60	1,880,546	2,254,923
Large	8, 15, DEG*	60	2,385	1,880,546	2,254,923

***DEG is a double ended guillotine break which measures 43.84"**

Table 2: Existing materials at STP with associated surface areas or volume

Fixed Variables	Value
Aluminum Submerged (ft^2)	556.7
Aluminum Not-Submerged (ft^2)	5010.3
Fiberglass Insulation (ft^3)	12.5
Microtherm (ft^3)	1.8
Concrete (ft^2)	1447

Table 3: Scenario matrix of all the different cases ran for all break sizes

Case #	pH	Fiberglass (ft^3)	Water (L)		Case #	pH	Fiberglass (ft^3)	Water (L)
1	min	min	min		5	max	min	min
2	min	min	max		6	max	min	max
3	min	max	min		7	max	max	min
4	min	max	max		8	max	max	max

2.1 Temperature Profiles

Nominal sump pool temperature profiles shown in Figure 1 were generated for all break sizes identified in Table 1. These profiles describe the temperature behavior of only about the first 10.3 hours of the 30-day scenario. A maximum sump pool temperature profile as shown in Figure 2 was generated for one break size (6" break).

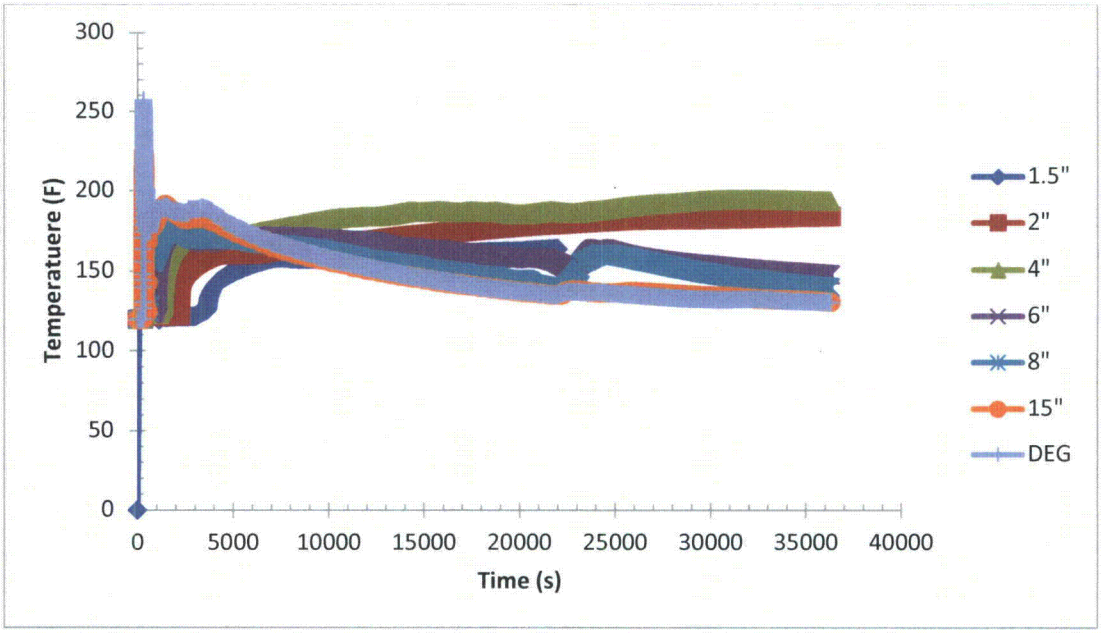

Figure 1 - Simulated Nominal Sump Temperature Profiles

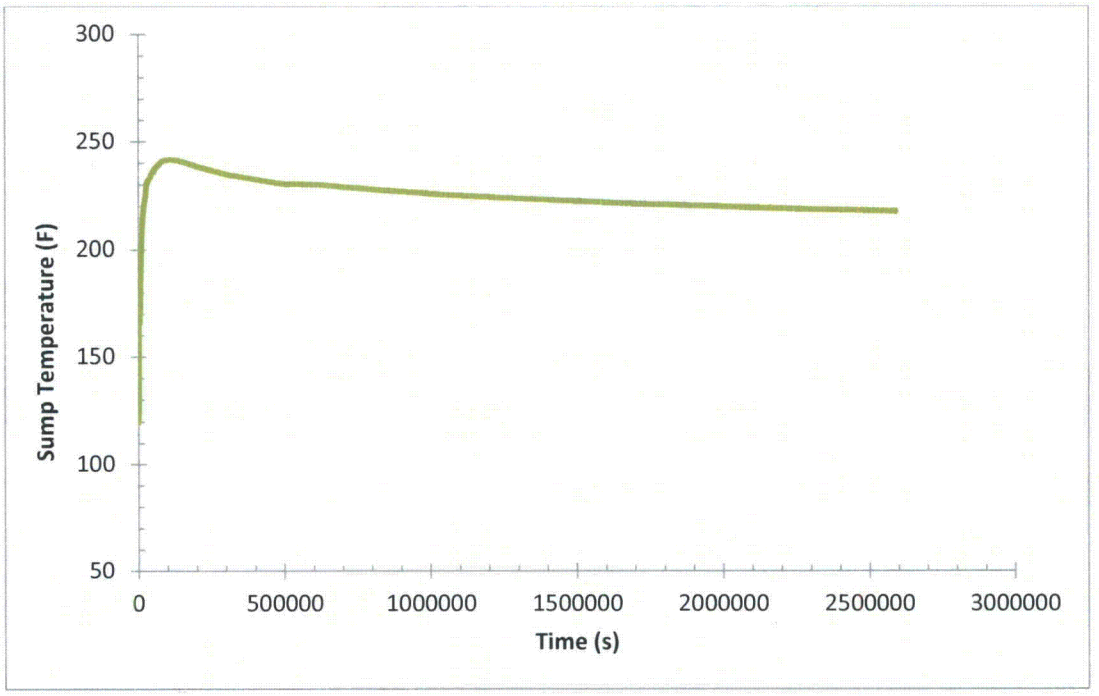

Figure 2 – Simulated Maximum Sump Temperature Profile During a 6-inch break

Since the MELCOR/Relap-5 simulation was only run for 10.3 hours, it was necessary to extrapolate the profiles from the available data to the full 30-day scenario duration. The simulated 10.3-hour profiles were extended to 30-day profiles for calculation of material release by linearly interpolating between the last simulated point and a 30-day temperature of 110 °F. Thirty-four temperature time steps from the 30-day profiles were used in the material release calculation. These time steps were chosen to describe the trends of the initial simulated temperature profile over time as shown by Figure 3 . Once these features were defined using several of the thirty-four time steps, the remaining time steps were chosen to represent the linear portion of the profile. The final 30-day temperature profiles used in the analysis are shown in Figure 4 and the individual time/temperature steps associated with these profiles are presented in Appendix A.

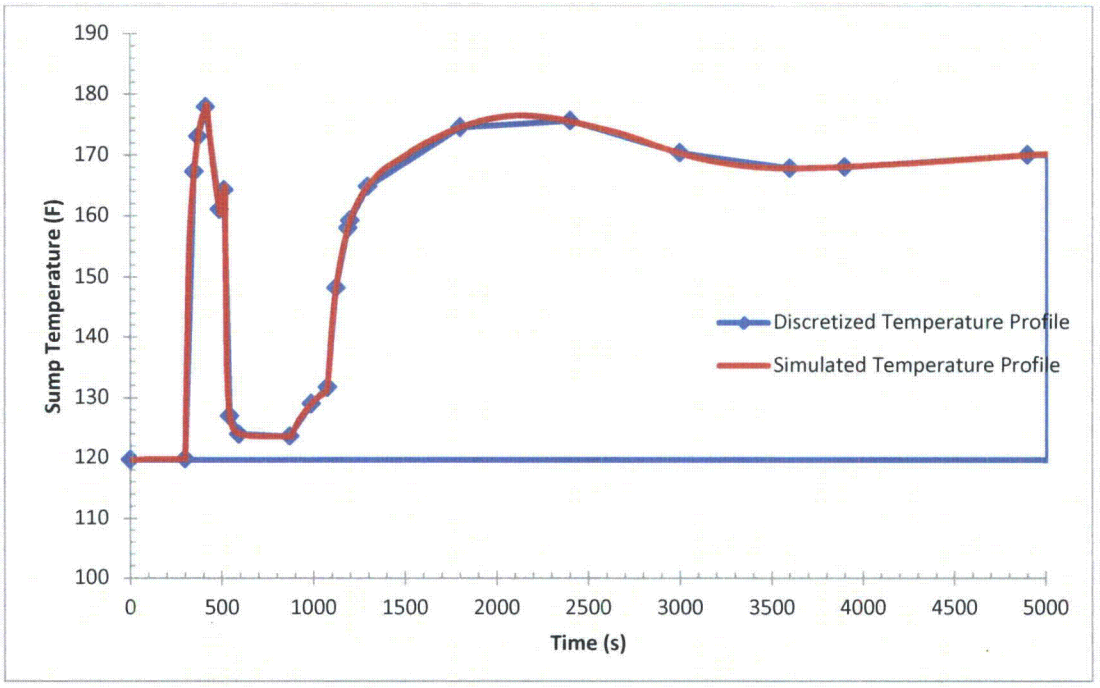

Figure 3 – The initial period of the adjusted profile as estimated from the simulated profile

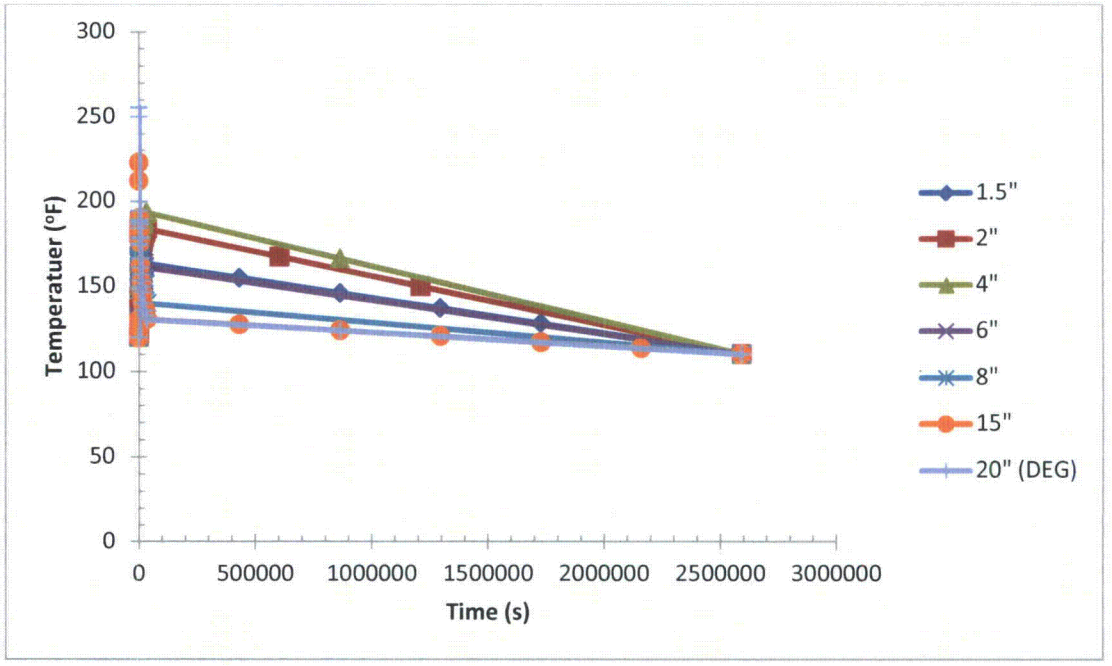

Figure 4 - Adjusted temperature profiles for different break sizes

The approach used to adjust the simulated profiles over the 30-day period results in varying degrees of conservatism (overestimated temperatures) when comparing the complete simulated models used in the MBLOCA [7] and LBLCOA [8] CHLE tests to the adjusted models as shown in Figure 5 for 6- and 15-

inch breaks. This is because the estimated portion of the profile (between 10.3 hours and 30 days) is not linear, yet adjustment was. The magnitude of conservatism associated with the adjusted model depends whether the final point of the simulated profile is in line with the general trend of the complete profile or on an upward path of a slight oscillation that exists early in the profile.

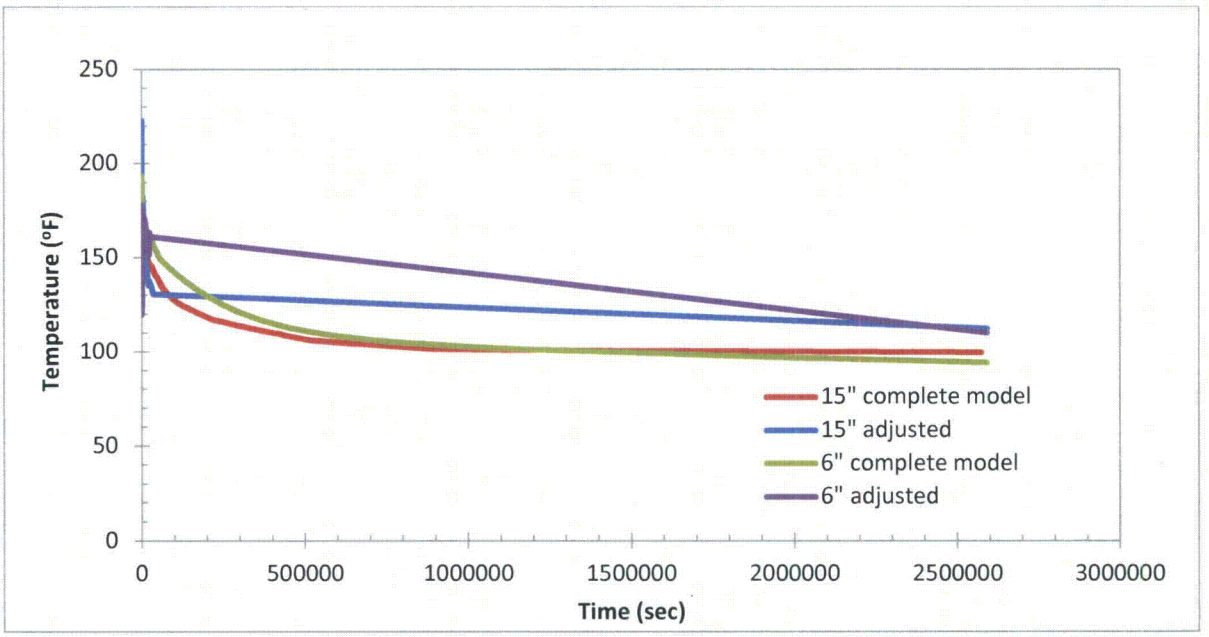

Figure 5 – Comparison of adjusted temperature profiles to complete simulations

The 4" break adjusted temperature profile is a prime example of this phenomena and results in the most conservative estimate of all breaks evaluated. The simulated data for the 4" break did not allow the accident scenario to develop long enough for a close approximation of the full profile behavior, as seen in Figure 6. For the 4" break, the point at which the extrapolation to 30-days begins is on an increasing trend. Hence, applying the linear extrapolation to 110 °F at day 30 from that point will result in a greater overestimation of the temperature profile than for the other break cases. This scenario contrasts with the DEG adjusted profile because the short time period of the DEG simulated profile as seen in Figure 6 was able to establish the general trend of decreasing temperature over time.

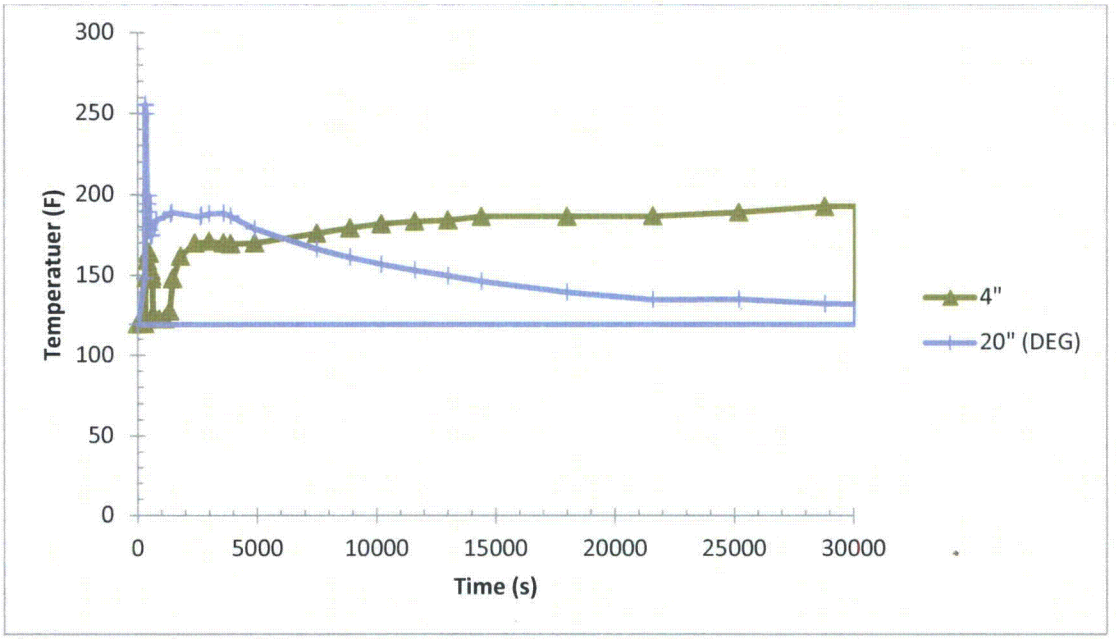

Figure 6 – Simulated Temperature Profiles for 4" and DEG

2.2 pH

The bounding solution pH values of 7.0 and 7.3 were determined from an analysis of STP parameters which incorporates the range of trisodium phosphate (TSP) mass and boric acid concentrations for all categories of LOCA scenarios using Visual MINTEQ [7, 8]. The values are consistent with those measured in the CHLE tests. Since the pH values of 7.0 and 7.3 reflect complete TSP dissolution, the pH as a function of a linear TSP dissolution during the first 80 minutes of the event had to be determined. The pH resulting from a partial dissolution of the TSP at several time steps was determined using Visual MINTEQ. Regression equations were fit to the time-dependent pH trends determined from linear TSP dissolution of the minimum and maximum TSP masses. These regression equations were used to estimate the pH for use in the material release calculations. This complete analysis is presented in Appendix A. After complete dissolution, 80 minutes, the pH value was held constant.

2.3 Chemical Product Formation

The material release rates were determined using the WCAP-16530-NP material release equations [1]. However, the total quantity of material released was not assumed to fully precipitate into chemical products. Instead, solubility limits of chemical products expected to form [1] were calculated as a function of temperature and pH using Visual MINTEQ to determine the lowest concentration of metal required for product formation from the range of selected conditions. Sodium aluminum silicate and aluminum oxyhydroxide are the aluminum products described as possible precipitates in WCAP-16530-NP; however only the aluminum hydroxide solubility limit (Log K of 10.8 [9]) was considered in this

analysis since it was determined as a suitable substitute for sodium aluminum silicate in head loss testing [1]. Calcium phosphate (Log K of -28.25 [9]) solubility limits were also evaluated.

The lowest concentration of metals required to form these chemical products were determined by identifying the lowest solubility over the pH range of 7.0 to 7.3 at a defined temperature. Different temperature bounds were required for this evaluation because a decrease in temperature results in a decrease of aluminum product solubility over the given pH range as seen in Figure 7; while it produces an increase in calcium product solubility over the same pH range as seen in Figure 8. The temperature bound for aluminum product solubility was set at 140 °F (60°C) since this temperature has been used by United States Nuclear power plants in past analyses. The temperature bound for the calcium product solubility was set at 185°F (85°C). The chosen bound was lower than the LOCA peak temperatures because these peaks occur over a very short duration (minutes) of a 30-day event and return to temperatures ≤185°F (85°C) for appreciable durations before declining [2, 10]. Using this approach, the concentration of aluminum expected to result in formation of a chemical product is approximately 4.9 mg/L. The calcium concentration expected to result in the formation of a chemical product was 0.8 mg/L. These values were used to assess the presence of chemical product formation from the calculated material release.

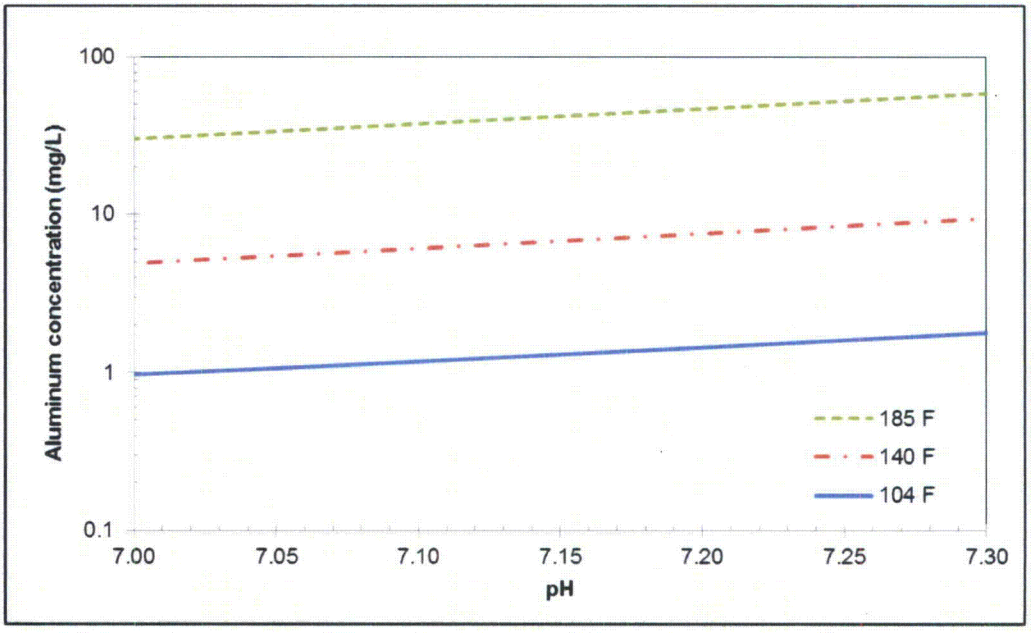

Figure 7 – Aluminum hydroxide solubility in borated-TSP solution

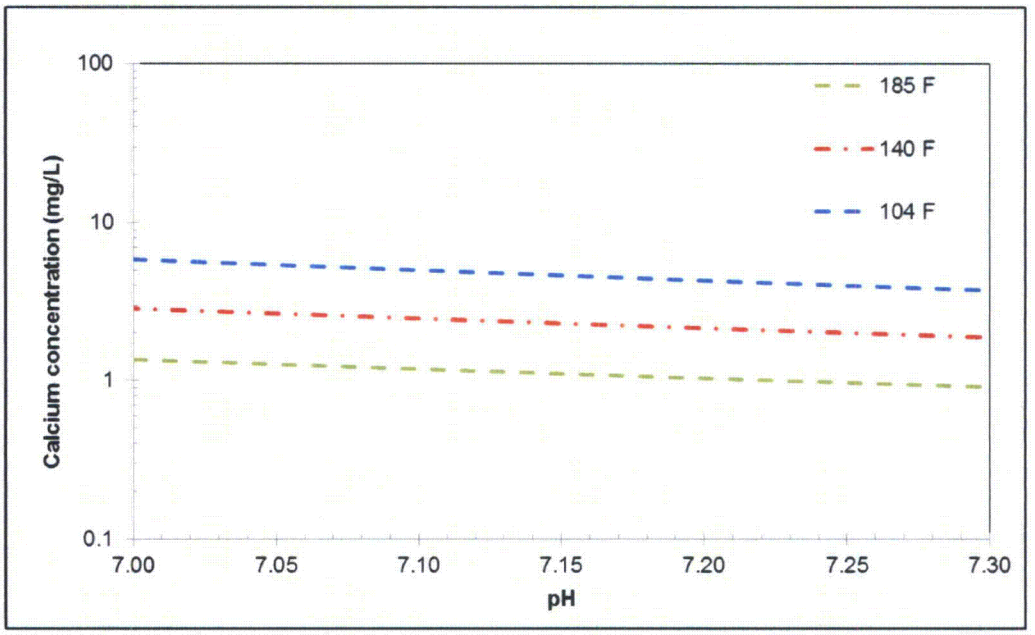

Figure 8 – Calcium hydroxide solubility in borated-TSP solution

3.0 Results

The resulting material release concentrations obtained from the complete analysis using nominal temperature profiles are listed in Table 4. The resulting material release concentrations for the analysis using the maximum temperature profile for the 6-inch break are presented by Table 5. The change in material release as a function of temperature profile is listed in Table 6. Additional details associated with these results are present in Appendix A.

Table 4 - Nominal temperature profile material release results

Case	Break (in)	Ca (mg/L)	Si (mg/L)	Al (mg/L)	Product	Case	Break (in)	Ca (mg/L)	Si (mg/L)	Al (mg/L)	Product
1	1.5	0.2	1.7	1.3	-	5	1.5	0.2	1.7	1.6	-
	2	0.2	1.7	3.5	-		2	0.2	1.7	4.1	-
	4	0.3	2.8	4.3	-		4	0.3	2.8	5.0	Al only
	6	0.3	2.8	1.7	-		6	0.3	2.8	2.1	-
	8	0.9	8.4	1.3	Ca only		8	0.9	8.4	1.5	Ca only
	15	0.9	7.2	1.1	Ca only		15	0.9	8.0	1.3	Ca only
	20	0.9	7.7	1.1	Ca only		20	0.9	8.4	1.3	Ca only
2	1.5	0.1	1.4	1.1	-	6	1.5	0.1	1.4	1.3	-
	2	0.1	1.4	2.9	-		2	0.1	1.4	3.4	-
	4	0.2	2.3	3.6	-		4	0.2	2.3	4.2	-
	6	0.2	2.3	1.5	-		6	0.2	2.3	1.7	-
	8	0.8	7.0	1.1	-		8	0.8	7.0	1.3	-
	15	0.8	6.2	0.9	-		15	0.8	6.9	1.1	-
	20	0.8	6.6	0.9	-		20	0.8	7.0	1.1	-
3	1.5	0.3	2.9	1.4	-	7	1.5	0.3	2.9	1.6	-
	2	0.3	2.9	3.6	-		2	0.3	2.9	4.1	-
	4	0.9	8.4	4.5	Ca only		4	0.9	8.4	5.3	Ca and Al
	6	0.9	8.4	1.8	Ca only		6	0.9	8.4	2.2	Ca only
	8	30.0	161.5	2.6	Ca only		8	30.0	173.1	2.9	Ca only
	15	25.0	41.6	1.5	Ca only		15	26.4	45.4	1.7	Ca only
	20	30.0	72.4	1.7	Ca only		20	30.0	78.6	2.0	Ca only
4	1.5	0.3	2.4	1.1	-	8	1.5	0.3	2.4	1.3	-
	2	0.3	2.4	2.9	-		2	0.3	2.4	3.4	-
	4	0.8	7.0	3.8	-		4	0.8	7.0	4.4	-
	6	0.8	7.0	1.5	-		6	0.8	7.0	1.8	-
	8	25.0	154.5	2.3	Ca only		8	25.0	167.3	2.6	Ca only
	15	25.0	37.5	1.3	Ca only		15	25.0	41.2	1.5	Ca only
	20	25.0	65.9	1.5	Ca only		20	25.0	72.0	1.7	Ca only

Table 5 - 6" Max temperature profile material release results

Case	Ca (mg/L)	Si (mg/L)	Al (mg/L)	Product
1	0.3	2.8	37.0	Al only
2	0.3	2.3	30.8	Al only
3	0.9	8.4	37.6	Ca and Al
4	0.8	7.0	31.3	Al only
5	0.3	2.8	41.8	Al only
6	0.3	2.3	34.9	Al only
7	0.9	8.4	42.4	Ca and Al
8	0.8	7.0	35.4	Al only

Table 6 – Ratios of maximum to minimum material release results for a 6" break

Case	Ca	Si	Al
1	1.1	1.0	21.2
2	1.1	1.0	21.2
3	1.0	1.0	20.3
4	1.0	1.0	20.3
5	1.1	1.0	20.4
6	1.1	1.0	20.3
7	1.0	1.0	19.6
8	1.0	1.0	19.5

4.0 Conclusion

None of the material releases quantities obtained from cases evaluated under SBLOCA conditions with nominal temperature profiles produce concentrations that exceeded the solubility limits set for this analysis of 0.8 mg/L for calcium and 4.9 mg/L for aluminum. Therefore, chemical products are not expected to exist in solution under these conditions. However, the cases evaluated under MBLOCA and LBLOCA conditions with nominal temperature profiles did result in material release quantities that produce concentration that exceed the set limits. Calcium phosphate is the dominant product expected to occur as a result of the larger break conditions. Aluminum material release results only produced concentrations that exceeded the set limit in analysis of the 4" break, Cases 5 and 7, and may be an artifact of the strategy for developing the adjusted simulated temperature profiles. Both the LBLOCA and MBLOCA conditions are expected to generate chemical products; although LBLOCA conditions are expected to generate the greatest quantities.

Only the 6" break was evaluated with a maximum temperature profile. All cases evaluated using this profile resulted in material release that produce concentrations that exceeds the solubility limits set for this analysis. However, the dominant product expected to exist in solution is an aluminum product. The use of maximum temperature profile in this analysis increased the calculated aluminum material release by 20X when compared to the results obtained using the nominal temperature profile. This increase in material release produces a shift in the dominant chemical product expected to exist in solution as compared to that generated using the nominal temperature profile.

5.0 References

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Appendix A – Results of Modeling Runs with the WCAP-16530-NP Chemical Effects Spreadsheet.

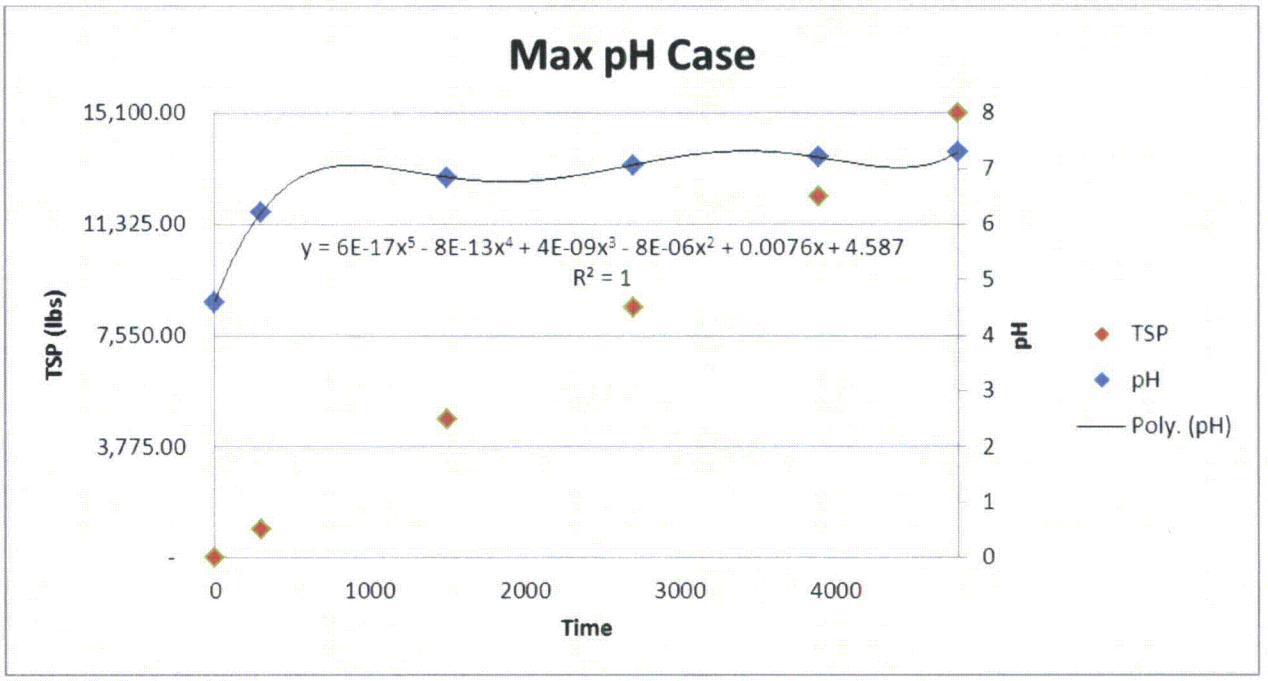
Summary of Nominal Temperature Material Release Results

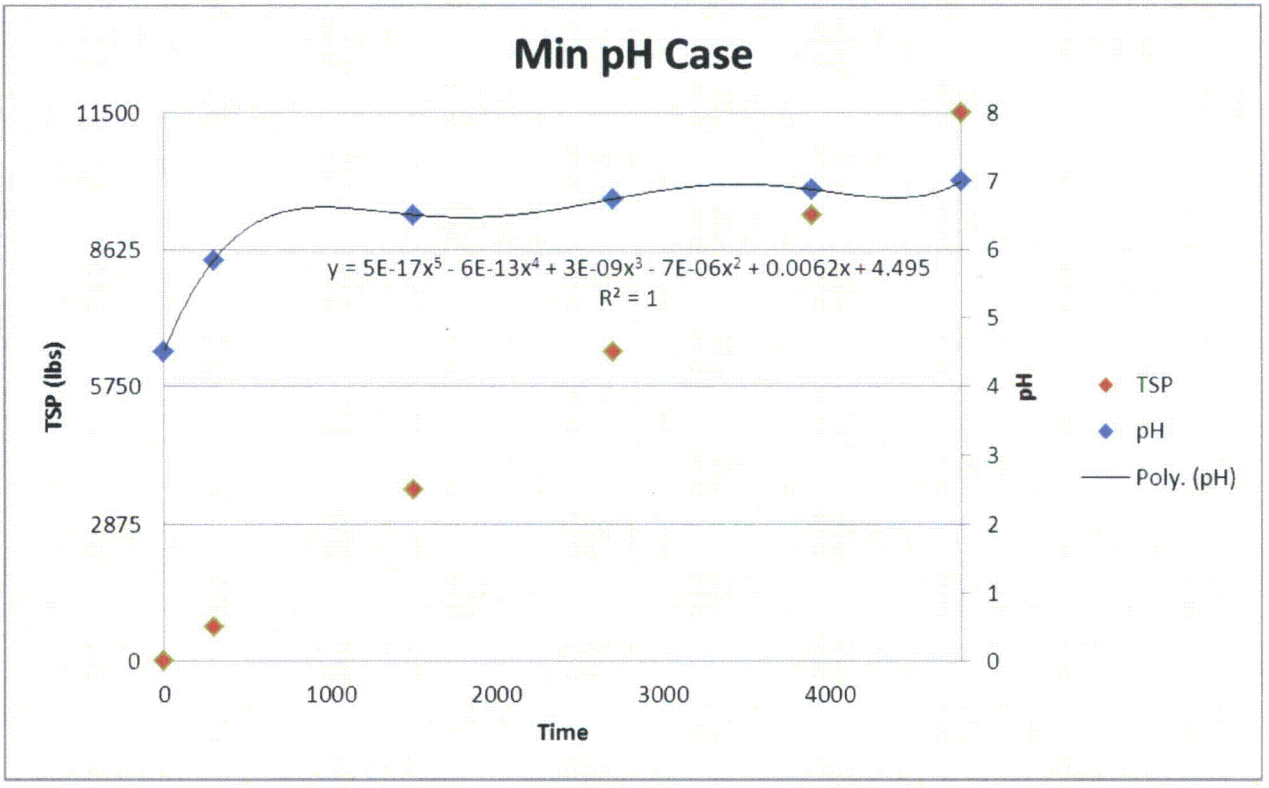
Case	Break (in)	nom/max Temperature	Ph	Fiberglass (ft^3)	Water (L)	Ca (kg)	Si (kg)	Al (kg)	Ca (mg/L)	Si (mg/L)	Al (mg/L)
1	1.5	nom	min	0	1775458	0.309768	3.072678	2.395254	0.174472	1.730639	1.349091
1	2	nom	min	0	1775458	0.314647	3.074214	6.219484	0.17722	1.731505	3.503031
1	4	nom	min	10	1880546	0.551069	5.20941	8.083305	0.293037	2.770158	4.298382
1	6	nom	min	10	1880546	0.546637	5.208075	3.277245	0.29068	2.769448	1.742709
1	8	nom	min	60	1880546	1.720097	15.88136	2.403946	0.914679	8.445078	1.278323
1	15	nom	min	60	1880546	1.71918	13.54346	2.038893	0.914192	7.201877	1.084203
1	20	nom	min	60	1880546	1.719152	14.46664	2.041167	0.914177	7.692786	1.085412
2	1.5	nom	min	0	2149838	0.309768	3.072678	2.395401	0.144089	1.42926	1.114224
2	2	nom	min	0	2149838	0.314647	3.074214	6.325335	0.146359	1.429975	2.942238
2	4	nom	min	10	2254923	0.551069	5.20941	8.086641	0.244385	2.310239	3.586216
2	6	nom	min	10	2254923	0.546637	5.208075	3.277311	0.242419	2.309646	1.453403
2	8	nom	min	60	2254923	1.720097	15.88136	2.404507	0.762818	7.042971	1.066337
2	15	nom	min	60	2254923	1.71918	14.00979	2.04142	0.762412	6.212979	0.905317
2	20	nom	min	60	2254923	1.719152	14.80358	2.042972	0.762399	6.565004	0.906005
3	1.5	nom	min	10	1775458	0.544913	5.207487	2.422611	0.306914	2.933038	1.364499
3	2	nom	min	10	1775458	0.549792	5.209023	6.305133	0.309662	2.933904	3.551271
3	4	nom	min	60	1880546	1.726793	15.88346	8.527405	0.91824	8.446193	4.534537
3	6	nom	min	60	1880546	1.722361	15.88212	3.472249	0.915883	8.445483	1.846405
3	8	nom	min	2385	1880546	56.39124	303.7469	4.811162	29.98663	161.5206	2.558386
3	15	nom	min	2385	1880546	47.10095	78.28131	2.754627	25.04642	41.62691	1.464802
3	20	nom	min	2385	1880546	56.39029	136.2349	3.215515	29.98613	72.44435	1.709884
4	1.5	nom	min	10	2149838	0.544913	5.207487	2.423081	0.253467	2.422269	1.127099
4	2	nom	min	10	2149838	0.549792	5.209023	6.308188	0.255736	2.422984	2.934262
4	4	nom	min	60	2254923	1.726793	15.88346	8.561163	0.765788	7.043901	3.796654
4	6	nom	min	60	2254923	1.722361	15.88212	3.487337	0.763822	7.043309	1.546544
4	8	nom	min	2385	2254923	56.39124	348.4975	5.268805	25.00806	154.5496	2.336579
4	15	nom	min	2385	2254923	56.39032	84.65537	2.827083	25.00765	37.54247	1.253738
4	20	nom	min	2385	2254923	56.39029	148.7064	3.353983	25.00764	65.94744	1.487405
5	1.5	nom	max	0	1775458	0.308972	3.072583	2.825317	0.174024	1.730586	1.591318
5	2	nom	max	0	1775458	0.313606	3.074102	7.248737	0.176634	1.731442	4.082742
5	4	nom	max	10	1880546	0.549964	5.209293	9.385713	0.292449	2.770096	4.990951
5	6	nom	max	10	1880546	0.545754	5.207973	3.858896	0.29021	2.769394	2.052008
5	8	nom	max	60	1880546	1.719327	15.88127	2.833909	0.91427	8.445029	1.506961
5	15	nom	max	60	1880546	1.718457	14.98323	2.411466	0.913807	7.967488	1.282322
5	20	nom	max	60	1880546	1.71843	15.88094	2.414907	0.913793	8.444855	1.284152
6	1.5	nom	max	0	2149838	0.308972	3.072583	2.825486	0.143719	1.429216	1.314279
6	2	nom	max	0	2149838	0.313606	3.074102	7.249844	0.145874	1.429923	3.372274
6	4	nom	max	10	2254923	0.549964	5.209293	9.389546	0.243895	2.310187	4.164021
6	6	nom	max	10	2254923	0.545754	5.207973	3.875782	0.242028	2.309601	1.718809
6	8	nom	max	60	2254923	1.719327	15.88127	2.834561	0.762477	7.04293	1.257054
6	15	nom	max	60	2254923	1.718457	15.52226	2.414371	0.762091	6.88372	1.070711
6	20	nom	max	60	2254923	1.71843	15.88094	2.416991	0.762079	7.042785	1.071873
7	1.5	nom	max	10	1775458	0.544117	5.207392	2.856055	0.306466	2.932985	1.60863
7	2	nom	max	10	1775458	0.548751	5.208911	7.344824	0.309075	2.933841	4.136862
7	4	nom	max	60	1880546	1.725687	15.88334	9.881057	0.917652	8.446131	5.254355
7	6	nom	max	60	1880546	1.721478	15.88202	4.078248	0.915414	8.445429	2.168651
7	8	nom	max	2385	1880546	56.39047	325.4314	5.451074	29.98622	173.0516	2.898666
7	15	nom	max	2385	1880546	49.72024	85.43209	3.202611	26.43926	45.42941	1.703022
7	20	nom	max	2385	1880546	56.38957	147.8191	3.698467	29.98574	78.60435	1.966699
8	1.5	nom	max	10	2149838	0.544117	5.207392	2.856595	0.253097	2.422225	1.328749
8	2	nom	max	10	2149838	0.548751	5.208911	7.34833	0.255252	2.422932	3.418085
8	4	nom	max	60	2254923	1.725687	15.88334	9.919818	0.765298	7.043849	4.399182
8	6	nom	max	60	2254923	1.721478	15.88202	4.095849	0.763431	7.043264	1.816403
8	8	nom	max	2385	2254923	56.39047	377.2099	5.909559	25.00771	167.2828	2.620736
8	15	nom	max	2385	2254923	56.3896	92.85198	3.287026	25.00733	41.17745	1.457711
8	20	nom	max	2385	2254923	56.38957	162.3537	3.860331	25.00732	71.99965	1.711957

Summary of Maximum Temperature Material Release Results

Case	Break (in)	nom/max Temperature	Ph	Fiberglass (ft^3)	Water (L)	Ca (kg)	Si (kg)	Al (kg)	Ca (mg/L)	Si (mg/L)	Al (mg/L)
1	6	max	min	10	1880546	0.577136	5.216356	69.56832	0.306898	2.773852	36.99368
2	6	max	min	10	2254923	0.577137	5.216356	69.53046	0.255945	2.313319	30.83496
3	6	max	min	60	1880546	1.752859	15.8904	70.62973	0.932101	8.449887	37.5581
4	6	max	min	60	2254923	1.75286	15.8904	70.62973	0.777348	7.046982	31.32246
5	6	max	max	10	1880546	0.574721	5.216157	78.69574	0.305614	2.773746	41.84728
6	6	max	max	10	2254923	0.574722	5.216157	78.69574	0.254874	2.313231	34.89952
7	6	max	max	60	1880546	1.750445	15.8902	79.75716	0.930817	8.449781	42.4117
8	6	max	max	60	2254923	1.750445	15.8902	79.75716	0.776277	7.046894	35.37024

pH Transient Curves





1.5in_nom_phmin_fgmax_wmin 1/15/20131:15 PM

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg
3	300	5.0	0	0	5.843	119.84	0	5.842727	119.84	
4	350	5.8	0	0	5.984	131.72	0	5.983841	131.72	
5	400	7	0	0	6.106	135.32	0	6.105895	135.32	
6	450	8	0	0	6.211	137.84	0	6.210506	137.84	
7	500	8	0	0	6.299	140.36	0	6.299208	140.36	
8	550	9	0	0	6.373	142.7	0	6.373458	142.7	
9	600	10	0	0	6.435	143.78	0	6.434641	143.78	
10	697.5	13	0	0	6.521	141.98	0	6.521253	141.98	
11	800	15	0	0	6.574	136.04	0	6.5738	136.04	
12	900	19	0	0	6.596	126.86	0	6.595662	126.86	
13	970	21	0	0	6.598	130.82	0	6.597771	130.82	
14	995	22	0	0	6.596	125.06	0	6.596418	125.06	
15	1200	30	1	0	6.557	121.64	0	6.557336	121.64	
16	2202	40	1	0	6.47	121.82	0	6.470374	121.82	
17	2282.6	50	1	0	6.494	143.6	0	6.493982	143.6	
18	3000	61	1	0	6.767	154.4	0	6.76747	154.4	
19	3600	65	1	0	6.81	158.36	0	6.809991	158.36	
20	3900	66	1	0	6.717	159.62	0	6.717455	159.62	
21	4800	82	1	0	7	160.16	0	7	160.16	
22	4900	125	2	0	7	160.16	0	7	160.16	
23	7500	148	2	0	7	162.86	0	7	162.86	
24	8900	170	3	0	7	164.12	0	7	164.12	
25	10200.09	193	3	0	7	165.38	0	7	165.38	
26	14400.09	217	4	0	7	171.5	0	7	171.5	
27	18000.09	240	4	0	7	175.64	0	7	175.64	
28	21600.09	300	5	0	7	178.7	0	7	178.7	
29	23400	360	6	0	7	179.96	0	7	179.96	
30	25200.09	367	6	0	7	181.04	0	7	181.04	
31	28800.09	7200	120	5	7	181.76	0			
32	36300	14400	240	10	7	183.74	0			
33	604800	21600	360	15	7	167.32626	0			
34	1209600	28800	480	20	7	149.87536	0			
35	2592000	43200	720	30	7	109.98759	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg
3	300	5.0	0	0	6.227	119.84	0	6.226547	119.84	
4	350	5.8	0	0	6.396	131.72	0	6.395595	131.72	
5	400	7	0	0	6.541	135.32	0	6.540925	135.32	
6	450	8	0	0	6.665	137.84	0	6.664573	137.84	
7	500	8	0	0	6.768	140.36	0	6.768475	140.36	
8	550	9	0	0	6.854	142.7	0	6.854469	142.7	
9	600	10	0	0	6.924	143.78	0	6.924298	143.78	
10	697.5	13	0	0	7.02	141.98	0	7.020128	141.98	
11	800	15	0	0	7.074	136.04	0	7.073573	136.04	
12	900	19	0	0	7.09	126.86	0	7.089852	126.86	
13	970	21	0	0	7.085	130.82	0	7.08531	130.82	
14	995	22	0	0	7.081	125.06	0	7.081168	125.06	
15	1200	30	1	0	7.015	121.64	0	7.014539	121.64	
16	2202	40	1	0	6.875	121.82	0	6.875394	121.82	
17	2282.6	50	1	0	6.906	143.6	0	6.905767	143.6	
18	3000	61	1	0	7.267	154.4	0	7.2666	154.4	
19	3600	65	1	0	7.342	158.36	0	7.342119	158.36	
20	3900	66	1	0	7.239	159.62	0	7.238753	159.62	
21	4800	82	1	0	7.3	160.16	0	7.3	160.16	
22	4900	125	2	0	7.3	160.16	0	7.3	160.16	
23	7500	148	2	0	7.3	162.86	0	7.3	162.86	
24	8900	170	3	0	7.3	164.12	0	7.3	164.12	
25	10200.09	193	3	0	7.3	165.38	0	7.3	165.38	
26	14400.09	217	4	0	7.3	171.5	0	7.3	171.5	
27	18000.09	240	4	0	7.3	175.64	0	7.3	175.64	
28	21600.09	300	5	0	7.3	178.7	0	7.3	178.7	
29	23400	360	6	0	7.3	179.96	0	7.3	179.96	
30	25200.09	367	6	0	7.3	181.04	0	7.3	181.04	
31	28800.09	7200	120	5	7.3	181.76	0			
32	36300	14400	240	10	7.3	183.74	0			
33	604800	21600	360	15	7.3	167.32626	0			
34	1209600	28800	480	20	7.3	149.87536	0			
35	2592000	43200	720	30	7.3	109.98759	0			
36	Do not enter data below row 35.									
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	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg
3	300	5.0	0	0	5.843	119.84	0	5.842727	119.84	
4	350	5.8	0	0	5.984	131.72	0	5.983841	131.72	
5	400	7	0	0	6.106	135.32	0	6.105895	135.32	
6	450	8	0	0	6.211	137.84	0	6.210506	137.84	
7	500	8	0	0	6.299	140.36	0	6.299208	140.36	
8	550	9	0	0	6.373	142.7	0	6.373458	142.7	
9	600	10	0	0	6.435	143.78	0	6.434641	143.78	
10	697.5	12	0	0	6.521	141.98	0	6.521253	141.98	
11	800	13	0	0	6.574	136.04	0	6.5738	136.04	
12	900	15	0	0	6.596	126.86	0	6.595662	126.86	
13	970	16	0	0	6.598	130.82	0	6.597771	130.82	
14	995	17	0	0	6.596	125.06	0	6.596418	125.06	
15	1200	20	0	0	6.557	121.64	0	6.557336	121.64	
16	2202	37	1	0	6.47	121.82	0	6.470374	121.82	
17	2282.6	38	1	0	6.494	143.6	0	6.493982	143.6	
18	3000	50	1	0	6.767	154.4	0	6.76747	154.4	
19	3600	60	1	0	6.81	158.36	0	6.809991	158.36	
20	3900	65	1	0	6.717	159.62	0	6.717455	159.62	
21	4800	80	1	0	7	160.16	0	7	160.16	
22	4900	82	1	0	7	162.86	0	7	162.86	
23	7500	125	2	0	7	164.12	0	7	164.12	
24	8900	148	2	0	7	165.38	0	7	165.38	
25	10200.09	170	3	0	7	167.36	0	7	167.36	
26	14400.09	240	4	0	7	169.52	0	7	169.52	
27	18000.09	300	5	0	7	171.5	0	7	171.5	
28	21600.09	360	6	0	7	175.64	0	7	175.64	
29	23400	390	7	0	7	178.7	0	7	178.7	
30	25200.09	420	7	0	7	181.04	0			
31	28800.09	480	8	0	7	181.76	0			
32	36300	605	10	0	7	183.74	0			
33	604800	10080	168	7	7	167.3367	0			
34	1209600	20160	336	14	7	149.8858	0			
35	2592000	43200	720	30	7	109.99803	0			
36	Do not enter data below row 35.									
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	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg
3	300	5.0	0	0	6.227	119.84	0	6.226547	119.84	
4	350	5.8	0	0	6.396	131.72	0	6.395595	131.72	
5	400	7	0	0	6.541	135.32	0	6.540925	135.32	
6	450	8	0	0	6.665	137.84	0	6.664573	137.84	
7	500	8	0	0	6.768	140.36	0	6.768475	140.36	
8	550	9	0	0	6.854	142.7	0	6.854469	142.7	
9	600	10	0	0	6.924	143.78	0	6.924298	143.78	
10	697.5	12	0	0	7.02	141.98	0	7.020128	141.98	
11	800	13	0	0	7.074	136.04	0	7.073573	136.04	
12	900	15	0	0	7.09	126.86	0	7.089852	126.86	
13	970	16	0	0	7.085	130.82	0	7.08531	130.82	
14	995	17	0	0	7.081	125.06	0	7.081168	125.06	
15	1200	20	0	0	7.015	121.64	0	7.014539	121.64	
16	2202	37	1	0	6.875	121.82	0	6.875394	121.82	
17	2282.6	38	1	0	6.906	143.6	0	6.905767	143.6	
18	3000	50	1	0	7.267	154.4	0	7.2666	154.4	
19	3600	60	1	0	7.342	158.36	0	7.342119	158.36	
20	3900	65	1	0	7.239	159.62	0	7.238753	159.62	
21	4800	80	1	0	7.3	160.16	0	7.3	160.16	
22	4900	82	1	0	7.3	162.86	0	7.3	162.86	
23	7500	125	2	0	7.3	164.12	0	7.3	164.12	
24	8900	148	2	0	7.3	165.38	0	7.3	165.38	
25	10200.09	170	3	0	7.3	167.36	0	7.3	167.36	
26	14400.09	240	4	0	7.3	169.52	0	7.3	169.52	
27	18000.09	300	5	0	7.3	171.5	0	7.3	171.5	
28	21600.09	360	6	0	7.3	175.64	0	7.3	175.64	
29	23400	390	7	0	7.3	178.7	0	7.3	178.7	
30	25200.09	420	7	0	7.3	181.04	0			
31	28800.09	480	8	0	7.3	181.76	0			
32	36300	605	10	0	7.3	183.74	0			
33	604800	10080	168	7	7.3	167.3367	0			
34	1209600	20160	336	14	7.3	149.8858	0			
35	2592000	43200	720	30	7.3	109.99803	0			
36	Do not enter data below row 35.									
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes						
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg						
3	300	5.0	0	0	5.843	119.84	0	5.842727	119.84							
4	350	5.8	0	0	5.984	148.82	0	5.983841	148.82							
5	400	7	0	0	6.106	159.26	0	6.105895	159.26							
6	450	8	0	0	6.211	164.12	0	6.210506	164.12							
7	500	8	0	0	6.299	163.58	0	6.299208	163.58							
8	550	9	0	0	6.373	153.14	0	6.373458	153.14							
9	572.5	10	0	0	6.403	148.1	0	6.402528	148.1							
10	602.5	10	0	0	6.437	149.9	0	6.437381	149.9							
11	637.5	11	0	0	6.473	126.14	0	6.472743	126.14							
12	662.5	11	0	0	6.495	123.98	0	6.49473	123.98							
13	900	15	0	0	6.596	122.9	0	6.595662	122.9							
14	1132	18	0	0	6.574	122.9	0	6.574484	122.9							
15	1345	22	0	0	6.515	127.94	0	6.515081	127.94							
16	1472.6	25	0	0	6.479	147.92	0	6.478571	147.92							
17	1800	30	1	0	6.424	161.78	0	6.423518	161.78							
18	2400	40	1	0	6.535	169.88	0	6.534534	169.88							
19	3000	50	1	0	6.767	170.96	0	6.76747	170.96							
20	3900	65	1	0	6.717	169.88	0	6.717455	169.88							
21	4800	80	1	0	7	169.34	0	7	169.34							
22	4900	82	1	0	7	169.88	0	7	169.88							
23	7500	125	2	0	7	176	0	7	176							
24	10200.09	170	3	0	7	179.24	0	7	179.24							
25	11600.09	193	3	0	7	181.94	0	7	181.94							
26	13000.09	217	4	0	7	183.38	0	7	183.38							
27	14400.09	240	4	0	7	184.1	0	7	184.1							
28	18000.09	300	5	0	7	186.44	0	7	186.44							
29	21600.09	360	6	0	7	186.44	0	7	186.44							
30	23400	390	7	0	7	186.8	0	7	186.8							
31	25200.09	420	7	0	7	189.14	0		189.14							
32	28800.09	480	8	0	7	192.74	0									
33	36300	605	10	0	7	193.28	0									
34	864000	14400	240	10	7	166.30881	0									
35	2592000	43200	720	30	7	110.00124	0									
36	Do not enter data below row 35.															
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	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg
3	300	5.0	0	0	6.227	119.84	0	6.226547	119.84	
4	350	5.8	0	0	6.396	148.82	0	6.395595	148.82	
5	400	7	0	0	6.541	159.26	0	6.540925	159.26	
6	450	8	0	0	6.665	164.12	0	6.664573	164.12	
7	500	8	0	0	6.768	163.58	0	6.768475	163.58	
8	550	9	0	0	6.854	153.14	0	6.854469	153.14	
9	572.5	10	0	0	6.888	148.1	0	6.887792	148.1	
10	602.5	10	0	0	6.927	149.9	0	6.927395	149.9	
11	637.5	11	0	0	6.967	126.14	0	6.967056	126.14	
12	662.5	11	0	0	6.991	123.98	0	6.991353	123.98	
13	900	15	0	0	7.09	122.9	0	7.089852	122.9	
14	1132	19	0	0	7.041	122.9	0	7.041408	122.9	
15	1345	22	0	0	6.952	127.94	0	6.951677	127.94	
16	1472.6	25	0	0	6.899	147.92	0	6.898924	147.92	
17	1800	30	1	0	6.819	161.78	0	6.818831	161.78	
18	2400	40	1	0	6.958	169.88	0	6.95832	169.88	
19	3000	50	1	0	7.267	170.96	0	7.2666	170.96	
20	3900	65	1	0	7.239	169.88	0	7.238753	169.88	
21	4800	80	1	0	7.3	169.34	0	7.3	169.34	
22	4900	82	1	0	7.3	169.88	0	7.3	169.88	
23	7500	125	2	0	7.3	176	0	7.3	176	
24	10200.09	170	3	0	7.3	179.24	0	7.3	179.24	
25	11600.09	193	3	0	7.3	181.94	0	7.3	181.94	
26	13000.09	217	4	0	7.3	183.38	0	7.3	183.38	
27	14400.09	240	4	0	7.3	184.1	0	7.3	184.1	
28	18000.09	300	5	0	7.3	186.44	0	7.3	186.44	
29	21600.09	360	6	0	7.3	186.44	0	7.3	186.44	
30	23400	390	7	0	7.3	186.8	0	7.3	186.8	
31	25200.09	420	7	0	7.3	189.14	0			
32	28800.09	480	8	0	7.3	192.74	0			
33	36300	605	10	0	7.3	193.28	0			
34	864000	14400	240	10	7.3	166.30881	0			
35	2592000	43200	720	30	7.3	110.00124	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg
3	300	5.0	0	0	5.843	119.84	0	5.842727	119.84	
4	348	5.8	0	0	5.979	167.36	0	5.978573	167.36	
5	370.1	6	0	0	6.035	173.12	0	6.035105	173.12	
6	412.5	7	0	0	6.134	177.98	0	6.133622	177.98	
7	487.5	8	0	0	6.278	161.06	0	6.278442	161.06	
8	512.5	9	0	0	6.319	164.3	0	6.31907	164.3	
9	542.5	9	0	0	6.363	127.04	0	6.363187	127.04	
10	870	15	0	0	6.592	123.98	0	6.591681	123.62	
11	987.5	16	0	0	6.597	123.62	0	6.596928	129.02	
12	1075	18	0	0	6.586	129.02	0	6.586144	131.72	
13	1122.59	19	0	0	6.577	131.72	0	6.576607	148.28	
14	1187.6	20	0	0	6.561	148.28	0	6.560664	158	
15	1200	20	0	0	6.557	158	0	6.557336	159.26	
16	1295	22	0	0	6.53	159.26	0	6.53002	164.84	
17	1800	30	1	0	6.424	164.84	0	6.423518	174.56	
18	2400	40	1	0	6.535	174.56	0	6.534534	175.64	
19	3000	50	1	0	6.767	175.64	0	6.76747	170.42	
20	3600	60	1	0	6.81	170.42	0	6.809991	167.9	
21	3900	65	1	0	6.717	167.9	0	6.717455	168.08	
22	4800	80	1	0	7	168.08	0	7	168.88	
23	8900	148	2	0	7	170.06	0	7	170.6	
24	11600.09	193	3	0	7	170.6	0	7	168.62	
25	13000.09	217	4	0	7	168.62	0	7	165.92	
26	14400.09	240	4	0	7	165.92	0	7	164.3	
27	18000.09	300	5	0	7	164.3	0	7	160.16	
28	19450	324	5	0	7	160.16	0	7	158	
29	21600.09	360	6	0	7	158	0	7	156.92	
30	22650	378	6	0	7	156.92	0	7	151.34	
31	23050	384	6	0	7	151.34	0	7	152.78	
32	23400	390	7	0	7	152.78	0	7	157.28	
33	24000	400	7	0	7	163.4	0			
34	25200.09	420	7	0	7	161.24	0			
35	2592000	43200	720	30	7	109.994	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg
3	300	5.0	0	0	6.227	119.84	0	6.226547	119.84	
4	348	5.8	0	0	6.389	167.36	0	6.389302	167.36	
5	370.1	6	0	0	6.457	173.12	0	6.456752	173.12	
6	412.5	7	0	0	6.574	177.98	0	6.573792	177.98	
7	487.5	8	0	0	6.744	161.06	0	6.744248	161.06	
8	512.5	9	0	0	6.792	164.3	0	6.791583	164.3	
9	542.5	9	0	0	6.843	127.04	0	6.842642	127.04	
10	870	15	0	0	7.088	123.98	0	7.088094	123.62	
11	987.5	16	0	0	7.083	123.62	0	7.082534	129.02	
12	1075	18	0	0	7.061	129.02	0	7.060893	131.72	
13	1122.59	19	0	0	7.045	131.72	0	7.044851	148.28	
14	1187.6	20	0	0	7.02	148.28	0	7.019657	158	
15	1200	20	0	0	7.015	158	0	7.014539	159.26	
16	1295	22	0	0	6.974	159.26	0	6.973577	164.84	
17	1800	30	1	0	6.819	164.84	0	6.818831	174.56	
18	2400	40	1	0	6.958	174.56	0	6.95832	175.64	
19	3000	50	1	0	7.267	175.64	0	7.2666	170.42	
20	3600	60	1	0	7.342	170.42	0	7.342119	167.9	
21	3900	65	1	0	7.239	167.9	0	7.238753	168.08	
22	4800	80	1	0	7.3	168.08	0	7.3	169.88	
23	8900	148	2	0	7.3	170.06	0	7.3	170.6	
24	11600.09	193	3	0	7.3	170.6	0	7.3	168.62	
25	13000.09	217	4	0	7.3	168.62	0	7.3	165.92	
26	14400.09	240	4	0	7.3	165.92	0	7.3	164.3	
27	18000.09	300	5	0	7.3	164.3	0	7.3	160.16	
28	19450	324	5	0	7.3	160.16	0	7.3	158	
29	21600.09	360	6	0	7.3	158	0	7.3	156.92	
30	22650	378	6	0	7.3	156.92	0	7.3	151.34	
31	23050	384	6	0	7.3	151.34	0	7.3	152.78	
32	23400	390	7	0	7.3	152.78	0	7.3	157.28	
33	24000	400	7	0	7.3	163.4	0	7.3	163.4	
34	25200.09	420	7	0	7.3	161.24	0			
35	2592000	43200	720	30	7.3	109.994	0			
36	Do not enter data below row 35.									
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	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.6	0	4.495	119.6	temps increased by 5 deg
3	301	5.0	0	0	5.846	119.79	0	5.845747	119.79	
4	343.8	5.7	0	0	5.967	165.56	0	5.916616	165.56	
5	435	7	0	0	6.181	190.56	0	6.265541	190.56	
6	490	8	0	0	6.283	197	0	6.356174	197	
7	562.5	9	0	0	6.39	125.84	0	6.383436	125.84	
8	737.5	12	0	0	6.546	123.73	0	6.517756	123.73	
9	822.5	14	0	0	6.581	165.9	0	6.580963	165.9	
10	907.5	15	0	0	6.596	171.9065	0	6.589892	171.9065	
11	1062.593	18	0	0	6.588	173.37	0	6.596348	173.37	
12	1957.58	33	1	0	6.426	178.957	0	6.481418	178.957	
13	2317.58	39	1	0	6.505	178.06	0	6.427057	178.06	
14	4100	68	1	0	6.634	167.71	0	6.614107	167.71	
15	4150	69	1	0	6.614	169.93	0	6.570747	169.93	
16	4800	80	1	0	7	166.1437	0	7	166.1437	
17	5600	93	2	0	7	168.6	0	7	168.6	
18	9900	165	3	0	7	197.51	0	7	197.51	
19	15900	265	4	0	7	215.22	0	7	215.22	
20	23400	390	7	0	7	224.73	0	7	224.73	
21	25450	424	7	0	7	227.08	0			
22	47100	785	13	1	7	235.7	0			
23	93900	1565	26	1	7	241.495	0			
24	156900	2615	44	2	7	240.478	0			
25	466500	7775	130	5	7	231.161	0			
26	594300	9905	165	7	7	230.136	0			
27	675300	11255	188	8	7	229.42	0			
28	880500	14675	245	10	7	227.12	0			
29	1160000	19333	322	13	7	224.899	0			
30	1370000	22833	381	16	7	223.279	0			
31	1670000	27833	464	19	7	221.521	0			
32	1870000	31167	519	22	7	220.774	0			
33	2080000	34667	578	24	7	219.677	0			
34	2290000	38167	636	27	7	218.769	0			
35	2592000	43200	720	30	7	218.148	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.6	0	4.587	119.6	temps increased by 5 deg
3	301	5	0	0	6.23	119.79	0	6.230174	119.79	
4	343.8	6	0	0	6.376	165.56	0	6.31518	165.56	
5	435	7	0	0	6.63	190.56	0	6.729164	190.56	
6	490	8	0	0	6.749	197	0	6.834553	197	
7	562.5	9	0	0	6.873	125.84	0	6.865033	125.84	
8	737.5	12	0	0	7.046	123.73	0	7.016376	123.73	
9	822.5	14	0	0	7.08	165.9	0	7.079981	165.9	
10	907.5	15	0	0	7.09	171.9065	0	7.08695	171.9065	
11	1062.593	18	0	0	7.065	173.37	0	7.088919	173.37	
12	1957.58	33	1	0	6.82	178.957	0	6.903015	178.957	
13	2317.58	39	1	0	6.92	178.06	0	6.821028	178.06	
14	4100	68	1	0	7.144	167.71	0	7.121534	167.71	
15	4150	69	1	0	7.122	169.93	0	7.0988	169.93	
16	4800	80	1	0	7.3	166.1437	0	7.3	166.1437	
17	5600	93	2	0	7.3	168.6	0	7.3	168.6	
18	9900	165	3	0	7.3	197.51	0	7.3	197.51	
19	15900	265	4	0	7.3	215.22	0	7.3	215.22	
20	23400	390	7	0	7.3	224.73	0	7.3	224.73	
21	25450	424	7	0	7.3	227.08	0			
22	47100	785	13	1	7.3	235.7	0			
23	93900	1565	26	1	7.3	241.495	0			
24	156900	2615	44	2	7.3	240.478	0			
25	466500	7775	130	5	7.3	231.161	0			
26	594300	9905	165	7	7.3	230.136	0			
27	675300	11255	188	8	7.3	229.42	0			
28	880500	14675	245	10	7.3	227.12	0			
29	1160000	19333	322	13	7.3	224.898	0			
30	1370000	22833	381	16	7.3	223.279	0			
31	1670000	27833	464	19	7.3	221.521	0			
32	1870000	31167	519	22	7.3	220.774	0			
33	2080000	34667	578	24	7.3	219.677	0			
34	2290000	38167	636	27	7.3	218.769	0			
35	2592000	43200	720	30	7.3	218.149	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg
3	300	5.0	0	0	5.843	119.84	0	5.842727	119.84	
4	321	5.4	0	0	5.904	170.6	0	5.904423	170.6	
5	359	6	0	0	6.007	188.6	0	6.007169	188.6	
6	442.5	7	0	0	6.196	174.02	0	6.195885	174.02	
7	460	8	0	0	6.229	176.18	0	6.229471	176.18	
8	480	8	0	0	6.266	129.38	0	6.265541	129.38	
9	492.5	8	0	0	6.287	126.32	0	6.286856	126.32	
10	637.5	11	0	0	6.473	124.16	0	6.472743	124.16	
11	662.5	11	0	0	6.495	165.56	0	6.49473	165.56	
12	672.5	11	0	0	6.503	166.46	0	6.502802	166.46	
13	737.5	12	0	0	6.546	157.46	0	6.545942	157.46	
14	790	13	0	0	6.57	155.3	0	6.570153	155.3	
15	982	16	0	0	6.597	156.2	0	6.597247	156.2	
16	1525	25	0	0	6.465	159.26	0	6.465221	159.26	
17	1555	26	0	0	6.458	174.56	0	6.458202	174.56	
18	1890	32	1	0	6.423	175.1	0	6.422624	175.1	
19	2312	39	1	0	6.504	177.44	0	6.503514	177.44	
20	2495	42	1	0	6.571	176	0	6.571307	176	
21	3202	53	1	0	6.816	172.58	0	6.815658	172.58	
22	3900	65	1	0	6.717	169.52	0	6.717455	169.52	
23	4800	80	1	0	7	169.7	0	7	169.7	
24	4900	82	1	0	7	170.06	0	7	170.06	
25	7500	125	2	0	7	169.7	0	7	169.7	
26	10200.09	170	3	0	7	165.92	0	7	165.92	
27	18000.09	300	5	0	7	161.6	0	7	161.6	
28	22350	373	6	0	7	147.02	0	7	147.02	
29	22350	373	6	0	7	140.36	0	7	140.36	
30	23250	388	6	0	7	140.36	0	7	140.36	
31	23400	390	7	0	7	154.58	0	7	154.58	
32	24200	403	7	0	7	160.34	0			
33	28800.09	480	8	0	7	150.8	0			
34	36300	605	10	0	7	139.82	0			
35	2592000	43200	720	30	7	109.99871	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes						
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg						
3	300	5.0	0	0	6.227	119.84	0	4.587026	119.84							
4	321	5.4	0	0	6.301	170.6	0	4.587028	170.6							
5	359	6	0	0	6.423	188.6	0	4.587032	188.6							
6	442.5	7	0	0	6.647	174.02	0	4.587039	174.02							
7	460	8	0	0	6.687	176.18	0	4.58704	176.18							
8	480	8	0	0	6.729	129.38	0	4.587042	129.38							
9	492.5	8	0	0	6.754	126.32	0	4.587043	126.32							
10	637.5	11	0	0	6.967	124.16	0	4.587056	124.16							
11	662.5	11	0	0	6.991	165.56	0	4.587058	165.56							
12	672.5	11	0	0	7	166.46	0	4.587059	166.46							
13	737.5	12	0	0	7.046	157.46	0	4.587065	157.46							
14	790	13	0	0	7.07	155.3	0	4.587069	155.3							
15	982	16	0	0	7.083	156.2	0	4.587086	156.2							
16	1525	25	0	0	6.88	159.26	0	4.587134	159.26							
17	1555	26	0	0	6.87	174.56	0	4.587137	174.56							
18	1890	32	1	0	6.816	175.1	0	4.587166	175.1							
19	2312	39	1	0	6.918	177.44	0	4.587203	177.44							
20	2495	42	1	0	7.006	176	0	4.587219	176							
21	3202	53	1	0	7.334	172.58	0	4.587282	172.58							
22	3900	65	1	0	7.239	169.52	0	4.587343	169.52							
23	4800	80	1	0	7.3	169.7	0	7.3	169.7							
24	4900	82	1	0	7.3	170.06	0	7.3	170.06							
25	7500	125	2	0	7.3	169.7	0	7.3	169.7							
26	10200.09	170	3	0	7.3	165.92	0	7.3	165.92							
27	18000.09	300	5	0	7.3	161.6	0	7.3	161.6							
28	22350	373	6	0	7.3	147.02	0	7.3	147.02							
29	22350	373	6	0	7.3	140.36	0	7.3	140.36							
30	23250	388	6	0	7.3	140.36	0	7.3	140.36							
31	23400	390	7	0	7.3	154.58	0	7.3	154.58							
32	24200	403	7	0	7.3	160.34	0									
33	28800.09	480	8	0	7.3	150.8	0									
34	36300	605	10	0	7.3	139.82	0									
35	2592000	43200	720	30	7.3	109.99871	0									
36	Do not enter data below row 35.															
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	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg
3	300	5.0	0	0	5.843	130.1	0	5.842727	130.1	
4	330	5.5	0	0	5.93	222.8	0	5.929775	222.8	
5	362.3	6	0	0	6.016	222.98	0	6.01557	222.98	
6	389	6	0	0	6.081	212	0	6.080595	212	
7	405	7	0	0	6.117	129.56	0	6.117118	129.56	
8	530	9	0	0	6.345	124.52	0	6.345402	124.52	
9	552.5	9	0	0	6.377	188.06	0	6.376817	188.06	
10	677.5	11	0	0	6.507	184.46	0	6.506687	184.46	
11	792.5	13	0	0	6.571	178.34	0	6.571092	178.34	
12	957	16	0	0	6.598	177.26	0	6.598067	177.26	
13	1365	23	0	0	6.509	180.68	0	6.509131	180.68	
14	1430	24	0	0	6.49	187.7	0	6.49027	187.7	
15	2400	40	1	0	6.535	190.22	0	6.534534	190.22	
16	3000	50	1	0	6.767	182.48	0	6.76747	182.48	
17	3600	60	1	0	6.81	182.48	0	6.809991	182.48	
18	4800	80	1	0	7	182.3	0	7	182.3	
19	4900	82	1	0	7	175.64	0	7	175.64	
20	8000	133	2	0	7	161.78	0	7	161.78	
21	11600.09	193	3	0	7	152.06	0	7	152.06	
22	18000.09	300	5	0	7	145.94	0	7	145.94	
23	21600.09	360	6	0	7	139.82	0	7	139.82	
24	22150	369	6	0	7	135.14	0	7	135.14	
25	22350	373	6	0	7	134.96	0	7	134.96	
26	23400	390	7	0	7	136.58	0	7	136.58	
27	25200.09	420	7	0	7	136.58	0			
28	28800.09	480	8	0	7	135.14	0			
29	36300	605	10	0	7	130.46	0			
30	432000	7200	120	5	7	127.29127	0			
31	864000	14400	240	10	7	123.83274	0			
32	1296000	21600	360	15	7	120.37421	0			
33	1728000	28800	480	20	7	116.91567	0			
34	2160000	36000	600	25	7	113.45714	0			
35	2592000	43200	720	30	7	109.99861	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg
3	300	5.0	0	0	6.227	130.1	0	6.226547	130.1	
4	330	5.5	0	0	6.331	222.8	0	6.330939	222.8	
5	362.3	6	0	0	6.433	222.98	0	6.433465	222.98	
6	389	6	0	0	6.511	212	0	6.510882	212	
7	405	7	0	0	6.554	129.56	0	6.554232	129.56	
8	530	9	0	0	6.822	124.52	0	6.822107	124.52	
9	552.5	9	0	0	6.858	188.06	0	6.858331	188.06	
10	677.5	11	0	0	7.004	184.46	0	7.004411	184.46	
11	792.5	13	0	0	7.071	178.34	0	7.071053	178.34	
12	957	16	0	0	7.087	177.26	0	7.086978	177.26	
13	1365	23	0	0	6.943	180.68	0	6.943019	180.68	
14	1430	24	0	0	6.916	187.7	0	6.915746	187.7	
15	2400	40	1	0	6.958	190.22	0	6.95832	190.22	
16	3000	50	1	0	7.267	182.48	0	7.2666	182.48	
17	3600	60	1	0	7.342	182.48	0	7.342118	182.48	
18	4800	80	1	0	7.3	182.3	0	7.3	182.3	
19	4900	82	1	0	7.3	175.64	0	7.3	175.64	
20	8000	133	2	0	7.3	161.78	0	7.3	161.78	
21	11600.09	193	3	0	7.3	152.06	0	7.3	152.06	
22	18000.09	300	5	0	7.3	145.94	0	7.3	145.94	
23	21600.09	360	6	0	7.3	139.82	0	7.3	139.82	
24	22150	369	6	0	7.3	135.14	0	7.3	135.14	
25	22350	373	6	0	7.3	134.96	0	7.3	134.96	
26	23400	390	7	0	7.3	136.58	0	7.3	136.58	
27	25200.09	420	7	0	7.3	136.58	0			
28	28800.09	480	8	0	7.3	135.14	0			
29	36300	605	10	0	7.3	130.46	0			
30	432000	7200	120	5	7.3	127.29127	0			
31	864000	14400	240	10	7.3	123.83274	0			
32	1296000	21600	360	15	7.3	120.37421	0			
33	1728000	28800	480	20	7.3	116.91567	0			
34	2160000	36000	600	25	7.3	113.45714	0			
35	2592000	43200	720	30	7.3	109.99861	0			
36	Do not enter data below row 35.									
37										
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	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.495	119.66	0	4.495	119.66	temps increased by 5 deg
3	300	5.0	0	0	5.843	148.1	0	5.842727	148.1	
4	318	5.3	0	0	5.896	255.74	0	5.895829	255.74	
5	324	5	0	0	5.913	255.2	0	5.912945	255.2	
6	356	6	0	0	5.999	249.8	0	5.999461	249.8	
7	415	7	0	0	6.139	177.8	0	6.138039	177.8	
8	435	7	0	0	6.181	189.14	0	6.180862	189.14	
9	447	7	0	0	6.205	194.36	0	6.204693	194.36	
10	472	8	0	0	6.251	199.4	0	6.251407	199.4	
11	515	9	0	0	6.323	177.8	0	6.322936	177.8	
12	547	9	0	0	6.369	174.2	0	6.369385	174.2	
13	595	10	0	0	6.429	174.92	0	6.429073	174.92	
14	797	13	0	0	6.573	184.1	0	6.572737	184.1	
15	1392	23	0	0	6.501	188.24	0	6.501184	188.24	
16	1430	24	0	0	6.49	189.14	0	6.49027	189.14	
17	2640	44	1	0	6.631	186.08	0	6.631001	186.08	
18	2672.6	45	1	0	6.645	187.16	0	6.644578	187.16	
19	3000	50	1	0	6.767	188.06	0	6.76747	188.06	
20	3600	60	1	0	6.81	188.42	0	6.809991	188.42	
21	3900	65	1	0	6.717	186.62	0	6.717455	186.62	
22	4800	80	1	0	7	178.7	0	7	178.7	
23	4900	82	1	0	7	166.1	0	7	166.1	
24	7500	125	2	0	7	160.88	0	7	160.88	
25	10200.09	170	3	0	7	156.74	0	7	156.74	
26	11600.09	193	3	0	7	153.14	0	7	153.14	
27	14400.09	240	4	0	7	149.72	0	7	149.72	
28	18000.09	300	5	0	7	146.3	0	7	146.3	
29	21600.09	360	6	0	7	139.64	0	7	139.64	
30	23400	390	7	0	7	135.14	0	7	135.14	
31	25200.09	420	7	0	7	135.5	0			
32	28800.09	480	8	0	7	132.62	0			
33	36300	605	10	0	7	130.28	0			
34	864000	14400	240	10	7	123.71175	0			
35	2592000	43200	720	30	7	109.99924	0			
36	Do not enter data below row 35.									

	A	B	C	D	E	F	G	H	I	J
1	Time (sec)	min	hr	days	Sump pH	Sump Temp. (°F)	Sump Mixed 1=Yes	Steam or Spray pH	Containment Temp. (°F)	Notes
2	0	0	0	0	4.587	119.66	0	4.587	119.66	temps increased by 5 deg
3	300	5.0	0	0	6.227	148.1	0	6.226547	148.1	
4	318	5.3	0	0	6.29	255.74	0	6.290269	255.74	
5	324	5	0	0	6.311	255.2	0	6.310783	255.2	
6	356	6	0	0	6.414	249.8	0	6.414246	249.8	
7	415	7	0	0	6.58	177.8	0	6.580206	177.8	
8	435	7	0	0	6.63	189.14	0	6.629638	189.14	
9	447	7	0	0	6.658	194.36	0	6.65773	194.36	
10	472	8	0	0	6.713	199.4	0	6.712612	199.4	
11	515	9	0	0	6.796	177.8	0	6.796073	177.8	
12	547	9	0	0	6.85	174.2	0	6.849782	174.2	
13	595	10	0	0	6.918	174.92	0	6.917995	174.92	
14	797	13	0	0	7.073	184.1	0	7.072589	184.1	
15	1392	23	0	0	6.932	188.24	0	6.9315	188.24	
16	1430	24	0	0	6.916	189.14	0	6.915746	189.14	
17	2640	44	1	0	7.085	186.08	0	7.084536	186.08	
18	2672.6	45	1	0	7.102	187.16	0	7.102425	187.16	
19	3000	50	1	0	7.267	188.06	0	7.2666	188.06	
20	3600	60	1	0	7.342	188.42	0	7.342118	188.42	
21	3900	65	1	0	7.239	186.62	0	7.238753	186.62	
22	4800	80	1	0	7.3	178.7	0	7.3	178.7	
23	4900	82	1	0	7.3	166.1	0	7.3	166.1	
24	7500	125	2	0	7.3	160.88	0	7.3	160.88	
25	10200.09	170	3	0	7.3	156.74	0	7.3	156.74	
26	11600.09	193	3	0	7.3	153.14	0	7.3	153.14	
27	14400.09	240	4	0	7.3	149.72	0	7.3	149.72	
28	18000.09	300	5	0	7.3	146.3	0	7.3	146.3	
29	21600.09	360	6	0	7.3	139.64	0	7.3	139.64	
30	23400	390	7	0	7.3	135.14	0	7.3	135.14	
31	25200.09	420	7	0	7.3	135.5	0			
32	28800.09	480	8	0	7.3	132.62	0			
33	36300	605	10	0	7.3	130.28	0			
34	864000	14400	240	10	7.3	123.71175	0			
35	2592000	43200	720	30	7.3	109.99924	0			
36	Do not enter data below row 35.									

1.5", Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0005	0.0036	0.0007	0.007	0.000	0.001
0.8	0.08	0.1	5.913283902	123.62	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	135.59	0.00	0.01	0.00	0.0	0.0	0.00
1.7	0.19	0.2	6.547526712	134.69	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.22	0.3	6.584730826	126.5	0.00	0.02	0.00	0.0	0.0	0.00
1.2	0.25	0.3	6.596716438	121.82	0.00	0.02	0.00	0.0	0.0	0.00
0.4	0.27	0.3	6.597094637	123.26	0.00	0.02	0.00	0.0	0.0	0.00
3.4	0.28	0.3	6.576876737	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.19	0.00	0.05	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.482177912	121.37	0.00	0.05	0.01	0.1	0.0	0.01
12.0	0.63	0.8	6.630725852	123.53	0.01	0.07	0.01	0.1	0.0	0.01
10.0	0.83	1.0	6.788730328	131.72	0.01	0.09	0.02	0.2	0.0	0.02
5.0	1.00	1.1	6.76372264	138.38	0.01	0.10	0.02	0.2	0.0	0.02
15.0	1.08	1.3	6.858727312	143.69	0.01	0.14	0.03	0.3	0.0	0.02
1.7	1.33	1.4	7	153.32	0.01	0.14	0.03	0.3	0.0	0.02
43.3	1.36	2.1	7	157.82	0.02	0.30	0.10	0.9	0.0	0.04
23.3	2.08	2.5	7	157.55	0.02	0.38	0.13	1.2	0.0	0.05
21.7	2.47	2.8	7	157.82	0.02	0.42	0.16	1.3	0.1	0.06
70.0	2.83	4.0	7	158.27	0.03	0.43	0.27	1.3	0.3	0.09
60.0	4.00	5.0	7	158.9	0.04	0.44	0.36	1.4	0.5	0.11
60.0	5.00	6.0	7	160.25	0.05	0.46	0.45	1.4	0.7	0.14
30.0	6.00	6.5	7	162.14	0.06	0.46	0.50	1.4	0.8	0.15
30.0	6.50	7.0	7	163.22	0.06	0.47	0.51	1.5	0.8	0.16
60.0	7.00	8.0	7	159.1402928	0.07	0.48	0.52	1.5	0.8	0.19
125.0	8.00	10.1	7	150.3922784	0.09	0.50	0.53	1.6	0.8	0.23
9475.0	10.08	168.0	7	141.415664	0.30	1.63	1.25	5.1	1.6	0.77
10080.0	168.00	336.0	7	132.4390496	0.30	2.52	1.76	7.8	2.1	0.78
23040.0	336.00	720.0	7	118.974128	0.31	3.07	2.40	9.6	3.1	0.80

1.5", Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0005	0.0036	0.0007	0.007	0.000	0.001
0.8	0.08	0.1	5.913283902	123.62	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	135.59	0.00	0.01	0.00	0.0	0.0	0.00
1.7	0.19	0.2	6.547526712	134.69	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.22	0.3	6.584730826	126.5	0.00	0.02	0.00	0.0	0.0	0.00
1.2	0.25	0.3	6.596716438	121.82	0.00	0.02	0.00	0.0	0.0	0.00
0.4	0.27	0.3	6.597094637	123.26	0.00	0.02	0.00	0.0	0.0	0.00
3.4	0.28	0.3	6.576876737	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.19	0.00	0.05	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.482177912	121.37	0.00	0.05	0.01	0.1	0.0	0.01
12.0	0.63	0.8	6.630725852	123.53	0.01	0.07	0.01	0.1	0.0	0.01
10.0	0.83	1.0	6.788730328	131.72	0.01	0.09	0.02	0.2	0.0	0.02
5.0	1.00	1.1	6.76372264	138.38	0.01	0.10	0.02	0.2	0.0	0.02
15.0	1.08	1.3	6.858727312	143.69	0.01	0.14	0.03	0.3	0.0	0.02
1.7	1.33	1.4	7	153.32	0.01	0.14	0.03	0.3	0.0	0.02
43.3	1.36	2.1	7	157.82	0.02	0.30	0.10	0.9	0.0	0.04
23.3	2.08	2.5	7	157.55	0.02	0.38	0.13	1.2	0.0	0.05
21.7	2.47	2.8	7	157.82	0.02	0.42	0.16	1.3	0.1	0.06
70.0	2.83	4.0	7	158.27	0.03	0.43	0.27	1.3	0.3	0.09
60.0	4.00	5.0	7	158.9	0.04	0.44	0.36	1.4	0.5	0.11
60.0	5.00	6.0	7	160.25	0.05	0.46	0.45	1.4	0.7	0.14
30.0	6.00	6.5	7	162.14	0.06	0.46	0.50	1.4	0.8	0.15
30.0	6.50	7.0	7	163.22	0.06	0.47	0.51	1.5	0.8	0.16
60.0	7.00	8.0	7	159.1402928	0.07	0.48	0.52	1.5	0.8	0.19
125.0	8.00	10.1	7	150.3922784	0.09	0.50	0.53	1.6	0.8	0.23
9475.0	10.08	168.0	7	141.415664	0.30	1.63	1.25	5.1	1.6	0.77
10080.0	168.00	336.0	7	132.4390496	0.30	2.53	1.76	7.9	2.1	0.78
23040.0	336.00	720.0	7	118.974128	0.31	3.07	2.40	9.6	3.1	0.80

1.5", Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.913283902	123.62	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	135.59	0.00	0.01	0.00	0.0	0.0	0.01
1.7	0.19	0.2	6.547526712	134.69	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.22	0.3	6.584730826	126.5	0.00	0.02	0.00	0.0	0.0	0.01
1.2	0.25	0.3	6.596716438	121.82	0.00	0.02	0.00	0.0	0.0	0.01
0.4	0.27	0.3	6.597094637	123.26	0.00	0.02	0.00	0.0	0.0	0.01
3.4	0.28	0.3	6.576876737	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.19	0.01	0.05	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.482177912	121.37	0.01	0.05	0.01	0.1	0.0	0.02
12.0	0.63	0.8	6.630725852	123.53	0.01	0.07	0.01	0.1	0.0	0.02
10.0	0.83	1.0	6.788730328	131.72	0.01	0.09	0.02	0.2	0.0	0.03
5.0	1.00	1.1	6.76372264	138.38	0.01	0.10	0.02	0.2	0.0	0.03
15.0	1.08	1.3	6.858727312	143.69	0.02	0.14	0.03	0.3	0.0	0.04
1.7	1.33	1.4	7	153.32	0.02	0.15	0.03	0.3	0.0	0.04
43.3	1.36	2.1	7	157.82	0.03	0.31	0.10	0.9	0.0	0.07
23.3	2.08	2.5	7	157.55	0.03	0.40	0.13	1.2	0.0	0.09
21.7	2.47	2.8	7	157.82	0.04	0.44	0.16	1.4	0.0	0.11
70.0	2.83	4.0	7	158.27	0.06	0.46	0.27	1.4	0.3	0.16
60.0	4.00	5.0	7	158.9	0.08	0.48	0.36	1.5	0.4	0.20
60.0	5.00	6.0	7	160.25	0.09	0.50	0.45	1.6	0.6	0.24
30.0	6.00	6.5	7	162.14	0.10	0.52	0.50	1.6	0.8	0.27
30.0	6.50	7.0	7	163.22	0.11	0.53	0.51	1.6	0.8	0.29
60.0	7.00	8.0	7	159.1402928	0.13	0.55	0.52	1.7	0.8	0.33
125.0	8.00	10.1	7	150.3922784	0.16	0.58	0.53	1.8	0.8	0.41
9475.0	10.08	168.0	7	141.415664	0.53	2.61	1.26	8.1	0.9	1.38
10080.0	168.00	336.0	7	132.4390496	0.54	4.17	1.78	13.0	1.0	1.39
23040.0	336.00	720.0	7	118.974128	0.54	5.21	2.42	16.2	1.7	1.41

1.5", Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.913283902	123.62	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	135.59	0.00	0.01	0.00	0.0	0.0	0.01
1.7	0.19	0.2	6.547526712	134.69	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.22	0.3	6.584730826	126.5	0.00	0.02	0.00	0.0	0.0	0.01
1.2	0.25	0.3	6.596716438	121.82	0.00	0.02	0.00	0.0	0.0	0.01
0.4	0.27	0.3	6.597094637	123.26	0.00	0.02	0.00	0.0	0.0	0.01
3.4	0.28	0.3	6.576876737	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.19	0.01	0.05	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.482177912	121.37	0.01	0.05	0.01	0.1	0.0	0.02
12.0	0.63	0.8	6.630725852	123.53	0.01	0.07	0.01	0.1	0.0	0.02
10.0	0.83	1.0	6.788730328	131.72	0.01	0.09	0.02	0.2	0.0	0.03
5.0	1.00	1.1	6.76372264	138.38	0.01	0.10	0.02	0.2	0.0	0.03
15.0	1.08	1.3	6.858727312	143.69	0.02	0.14	0.03	0.3	0.0	0.04
1.7	1.33	1.4	7	153.32	0.02	0.15	0.03	0.3	0.0	0.04
43.3	1.36	2.1	7	157.82	0.03	0.31	0.10	0.9	0.0	0.07
23.3	2.08	2.5	7	157.55	0.03	0.40	0.13	1.2	0.0	0.09
21.7	2.47	2.8	7	157.82	0.04	0.44	0.16	1.4	0.0	0.11
70.0	2.83	4.0	7	158.27	0.06	0.46	0.27	1.4	0.3	0.16
60.0	4.00	5.0	7	158.9	0.08	0.48	0.36	1.5	0.4	0.20
60.0	5.00	6.0	7	160.25	0.09	0.50	0.45	1.6	0.6	0.24
30.0	6.00	6.5	7	162.14	0.10	0.52	0.50	1.6	0.8	0.27
30.0	6.50	7.0	7	163.22	0.11	0.53	0.51	1.6	0.8	0.29
60.0	7.00	8.0	7	159.1402928	0.13	0.55	0.52	1.7	0.8	0.33
125.0	8.00	10.1	7	150.3922784	0.16	0.58	0.53	1.8	0.8	0.41
9475.0	10.08	168.0	7	141.415664	0.53	2.61	1.26	8.1	0.9	1.38
10080.0	168.00	336.0	7	132.4390496	0.54	4.19	1.78	13.0	1.0	1.39
23040.0	336.00	720.0	7	118.974128	0.54	5.21	2.42	16.2	1.7	1.41

1.5", Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0005	0.0040	0.0008	0.007	0.000	0.001
0.8	0.08	0.1	6.311071012	123.62	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	135.59	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.19	0.2	7.046850686	134.69	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.22	0.3	7.081712732	126.5	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.25	0.3	7.087581222	121.82	0.00	0.03	0.01	0.1	0.0	0.00
0.4	0.27	0.3	7.083238889	123.26	0.00	0.03	0.01	0.1	0.0	0.00
3.4	0.28	0.3	7.047853343	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.19	0.00	0.06	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.890580386	121.37	0.00	0.06	0.01	0.1	0.0	0.01
12.0	0.63	0.8	7.086183381	123.53	0.01	0.08	0.02	0.2	0.0	0.01
10.0	0.83	1.0	7.304359296	131.72	0.01	0.10	0.02	0.2	0.0	0.02
5.0	1.00	1.1	7.2904359	138.38	0.01	0.12	0.03	0.3	0.0	0.02
15.0	1.08	1.3	7.269376604	143.69	0.01	0.16	0.04	0.4	0.0	0.02
1.7	1.33	1.4	7.3	153.32	0.01	0.17	0.04	0.4	0.0	0.02
43.3	1.36	2.1	7.3	157.82	0.02	0.35	0.12	1.1	0.0	0.04
23.3	2.08	2.5	7.3	157.55	0.02	0.42	0.16	1.3	0.0	0.05
21.7	2.47	2.8	7.3	157.82	0.02	0.42	0.19	1.3	0.1	0.06
70.0	2.83	4.0	7.3	158.27	0.03	0.44	0.31	1.4	0.4	0.09
60.0	4.00	5.0	7.3	158.9	0.04	0.45	0.42	1.4	0.6	0.11
60.0	5.00	6.0	7.3	160.25	0.05	0.46	0.53	1.4	0.8	0.14
30.0	6.00	6.5	7.3	162.14	0.06	0.47	0.59	1.5	1.0	0.15
30.0	6.50	7.0	7.3	163.22	0.06	0.48	0.60	1.5	1.0	0.16
60.0	7.00	8.0	7.3	159.1402928	0.07	0.49	0.61	1.5	1.0	0.19
125.0	8.00	10.1	7.3	150.3922784	0.09	0.51	0.62	1.6	1.0	0.24
9475.0	10.08	168.0	7.3	141.415664	0.30	1.77	1.46	5.5	2.0	0.77
10080.0	168.00	336.0	7.3	132.4390496	0.30	2.77	2.07	8.6	2.6	0.78
23040.0	336.00	720.0	7.3	118.974128	0.31	3.07	2.83	9.6	4.1	0.80

1.5", Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0005	0.0040	0.0008	0.007	0.000	0.001
0.8	0.08	0.1	6.311071012	123.62	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	135.59	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.19	0.2	7.046850686	134.69	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.22	0.3	7.081712732	126.5	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.25	0.3	7.087581222	121.82	0.00	0.03	0.01	0.1	0.0	0.00
0.4	0.27	0.3	7.083238889	123.26	0.00	0.03	0.01	0.1	0.0	0.00
3.4	0.28	0.3	7.047853343	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.19	0.00	0.06	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.890580386	121.37	0.00	0.06	0.01	0.1	0.0	0.01
12.0	0.63	0.8	7.086183381	123.53	0.01	0.08	0.02	0.2	0.0	0.01
10.0	0.83	1.0	7.304359296	131.72	0.01	0.10	0.02	0.2	0.0	0.02
5.0	1.00	1.1	7.2904359	138.38	0.01	0.12	0.03	0.3	0.0	0.02
15.0	1.08	1.3	7.269376604	143.69	0.01	0.16	0.04	0.4	0.0	0.02
1.7	1.33	1.4	7.3	153.32	0.01	0.17	0.04	0.4	0.0	0.02
43.3	1.36	2.1	7.3	157.82	0.02	0.35	0.12	1.1	0.0	0.04
23.3	2.08	2.5	7.3	157.55	0.02	0.42	0.16	1.3	0.0	0.05
21.7	2.47	2.8	7.3	157.82	0.02	0.42	0.19	1.3	0.1	0.06
70.0	2.83	4.0	7.3	158.27	0.03	0.44	0.31	1.4	0.4	0.09
60.0	4.00	5.0	7.3	158.9	0.04	0.45	0.42	1.4	0.6	0.11
60.0	5.00	6.0	7.3	160.25	0.05	0.46	0.53	1.4	0.8	0.14
30.0	6.00	6.5	7.3	162.14	0.06	0.47	0.59	1.5	1.0	0.15
30.0	6.50	7.0	7.3	163.22	0.06	0.48	0.60	1.5	1.0	0.16
60.0	7.00	8.0	7.3	159.1402928	0.07	0.49	0.61	1.5	1.0	0.19
125.0	8.00	10.1	7.3	150.3922784	0.09	0.51	0.62	1.6	1.0	0.24
9475.0	10.08	168.0	7.3	141.415664	0.30	1.77	1.46	5.5	2.0	0.77
10080.0	168.00	336.0	7.3	132.4390496	0.30	2.78	2.07	8.6	2.6	0.78
23040.0	336.00	720.0	7.3	118.974128	0.31	3.07	2.83	9.6	4.1	0.80

1.5", Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.311071012	123.62	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	135.59	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.19	0.2	7.046850686	134.69	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.22	0.3	7.081712732	126.5	0.00	0.02	0.01	0.1	0.0	0.01
1.2	0.25	0.3	7.087581222	121.82	0.00	0.03	0.01	0.1	0.0	0.01
0.4	0.27	0.3	7.083238889	123.26	0.00	0.03	0.01	0.1	0.0	0.01
3.4	0.28	0.3	7.047853343	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.19	0.01	0.06	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.890580386	121.37	0.01	0.06	0.01	0.1	0.0	0.02
12.0	0.63	0.8	7.086183381	123.53	0.01	0.08	0.02	0.2	0.0	0.02
10.0	0.83	1.0	7.304359296	131.72	0.01	0.11	0.02	0.2	0.0	0.03
5.0	1.00	1.1	7.2904359	138.38	0.01	0.12	0.03	0.3	0.0	0.03
15.0	1.08	1.3	7.269376604	143.69	0.02	0.17	0.04	0.4	0.0	0.04
1.7	1.33	1.4	7.3	153.32	0.02	0.17	0.04	0.4	0.0	0.04
43.3	1.36	2.1	7.3	157.82	0.03	0.36	0.12	1.1	0.0	0.08
23.3	2.08	2.5	7.3	157.55	0.04	0.43	0.16	1.4	0.0	0.09
21.7	2.47	2.8	7.3	157.82	0.04	0.44	0.19	1.4	0.1	0.11
70.0	2.83	4.0	7.3	158.27	0.06	0.47	0.31	1.5	0.4	0.16
60.0	4.00	5.0	7.3	158.9	0.08	0.49	0.42	1.5	0.6	0.20
60.0	5.00	6.0	7.3	160.25	0.10	0.52	0.53	1.6	0.8	0.25
30.0	6.00	6.5	7.3	162.14	0.11	0.53	0.59	1.7	0.9	0.27
30.0	6.50	7.0	7.3	163.22	0.11	0.54	0.60	1.7	0.9	0.29
60.0	7.00	8.0	7.3	159.1402928	0.13	0.57	0.61	1.8	0.9	0.34
125.0	8.00	10.1	7.3	150.3922784	0.16	0.61	0.63	1.9	1.0	0.42
9475.0	10.08	168.0	7.3	141.415664	0.53	2.87	1.48	8.9	1.2	1.38
10080.0	168.00	336.0	7.3	132.4390496	0.54	4.62	2.09	14.4	1.4	1.39
23040.0	336.00	720.0	7.3	118.974128	0.54	5.21	2.86	16.2	2.6	1.40

1.5", Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.311071012	123.62	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	129.38	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	132.08	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	132.98	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	133.7	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	134.69	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	135.59	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.19	0.2	7.046850686	134.69	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.22	0.3	7.081712732	126.5	0.00	0.02	0.01	0.1	0.0	0.01
1.2	0.25	0.3	7.087581222	121.82	0.00	0.03	0.01	0.1	0.0	0.01
0.4	0.27	0.3	7.083238889	123.26	0.00	0.03	0.01	0.1	0.0	0.01
3.4	0.28	0.3	7.047853343	121.82	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.19	0.01	0.06	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.890580386	121.37	0.01	0.06	0.01	0.1	0.0	0.02
12.0	0.63	0.8	7.086183381	123.53	0.01	0.08	0.02	0.2	0.0	0.02
10.0	0.83	1.0	7.304359296	131.72	0.01	0.11	0.02	0.2	0.0	0.03
5.0	1.00	1.1	7.2904359	138.38	0.01	0.12	0.03	0.3	0.0	0.03
15.0	1.08	1.3	7.269376604	143.69	0.02	0.17	0.04	0.4	0.0	0.04
1.7	1.33	1.4	7.3	153.32	0.02	0.17	0.04	0.4	0.0	0.04
43.3	1.36	2.1	7.3	157.82	0.03	0.36	0.12	1.1	0.0	0.08
23.3	2.08	2.5	7.3	157.55	0.04	0.43	0.16	1.4	0.0	0.09
21.7	2.47	2.8	7.3	157.82	0.04	0.44	0.19	1.4	0.1	0.11
70.0	2.83	4.0	7.3	158.27	0.06	0.47	0.31	1.5	0.4	0.16
60.0	4.00	5.0	7.3	158.9	0.08	0.49	0.42	1.5	0.6	0.20
60.0	5.00	6.0	7.3	160.25	0.10	0.52	0.53	1.6	0.8	0.25
30.0	6.00	6.5	7.3	162.14	0.11	0.53	0.59	1.7	0.9	0.27
30.0	6.50	7.0	7.3	163.22	0.11	0.54	0.60	1.7	0.9	0.29
60.0	7.00	8.0	7.3	159.1402928	0.13	0.57	0.61	1.8	0.9	0.34
125.0	8.00	10.1	7.3	150.3922784	0.16	0.61	0.63	1.9	1.0	0.42
9475.0	10.08	168.0	7.3	141.415664	0.53	2.87	1.48	8.9	1.2	1.38
10080.0	168.00	336.0	7.3	132.4390496	0.54	4.64	2.09	14.4	1.4	1.39
23040.0	336.00	720.0	7.3	118.974128	0.54	5.21	2.86	16.2	2.6	1.40

2", Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0005	0.0036	0.0007	0.007	0.000	0.001
0.8	0.08	0.1	5.913283902	125.78	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	142.88	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.19	0.2	6.547526712	139.01	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.22	0.3	6.584730826	131.45	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.25	0.3	6.596716438	128.84	0.00	0.02	0.01	0.1	0.0	0.00
0.4	0.27	0.3	6.597094637	127.94	0.00	0.02	0.01	0.1	0.0	0.00
3.4	0.28	0.3	6.576876737	123.35	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.73	0.00	0.05	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.482177912	132.71	0.00	0.05	0.01	0.1	0.0	0.01
12.0	0.63	0.8	6.630725852	149	0.01	0.08	0.02	0.2	0.0	0.01
10.0	0.83	1.0	6.788730328	156.38	0.01	0.12	0.03	0.3	0.0	0.02
5.0	1.00	1.1	6.76372264	158.99	0.01	0.13	0.04	0.4	0.0	0.02
15.0	1.08	1.3	6.858727312	159.89	0.01	0.19	0.06	0.6	0.0	0.03
1.7	1.33	1.4	7	161.51	0.01	0.20	0.07	0.6	0.0	0.03
43.3	1.36	2.1	7	163.49	0.02	0.37	0.14	1.2	0.1	0.05
23.3	2.08	2.5	7	164.75	0.02	0.42	0.19	1.3	0.1	0.06
21.7	2.47	2.8	7	166.37	0.03	0.43	0.23	1.3	0.2	0.07
70.0	2.83	4.0	7	168.44	0.04	0.44	0.39	1.4	0.5	0.10
60.0	4.00	5.0	7	170.51	0.05	0.46	0.53	1.4	0.8	0.12
60.0	5.00	6.0	7	173.57	0.06	0.48	0.69	1.5	1.2	0.15
30.0	6.00	6.5	7	177.17	0.06	0.49	0.78	1.5	1.4	0.17
30.0	6.50	7.0	7	179.87	0.07	0.50	0.79	1.5	1.4	0.18
60.0	7.00	8.0	7	181.4	0.08	0.52	0.81	1.6	1.4	0.21
125.0	8.00	10.1	7	182.75	0.11	0.57	0.86	1.8	1.5	0.28
9475.0	10.08	168.0	7	175.5383504	0.30	3.07	3.63	9.5	5.9	0.78
10080.0	168.00	336.0	7	158.6112512	0.31	3.07	5.17	9.5	9.3	0.79
23040.0	336.00	720.0	7	129.9419168	0.31	3.07	6.22	9.6	11.6	0.81

2", Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0005	0.0036	0.0008	0.008	0.000	0.001
0.8	0.08	0.1	5.913283902	125.78	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	142.88	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.19	0.2	6.547526712	139.01	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.22	0.3	6.584730826	131.45	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.25	0.3	6.596716438	128.84	0.00	0.02	0.01	0.1	0.0	0.00
0.4	0.27	0.3	6.597094637	127.94	0.00	0.02	0.01	0.1	0.0	0.00
3.4	0.28	0.3	6.576876737	123.35	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.73	0.00	0.05	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.482177912	132.71	0.00	0.05	0.01	0.1	0.0	0.01
12.0	0.63	0.8	6.630725852	149	0.01	0.08	0.02	0.2	0.0	0.01
10.0	0.83	1.0	6.788730328	156.38	0.01	0.12	0.04	0.4	0.0	0.02
5.0	1.00	1.1	6.76372264	158.99	0.01	0.13	0.05	0.4	0.0	0.02
15.0	1.08	1.3	6.858727312	159.89	0.01	0.19	0.08	0.6	0.0	0.03
1.7	1.33	1.4	7	161.51	0.01	0.20	0.08	0.6	0.0	0.03
43.3	1.36	2.1	7	163.49	0.02	0.37	0.16	1.2	0.1	0.05
23.3	2.08	2.5	7	164.75	0.02	0.42	0.20	1.3	0.2	0.06
21.7	2.47	2.8	7	166.37	0.03	0.43	0.25	1.3	0.2	0.07
70.0	2.83	4.0	7	168.44	0.04	0.44	0.40	1.4	0.6	0.10
60.0	4.00	5.0	7	170.51	0.05	0.46	0.54	1.4	0.9	0.12
60.0	5.00	6.0	7	173.57	0.06	0.48	0.70	1.5	1.2	0.15
30.0	6.00	6.5	7	177.17	0.06	0.49	0.79	1.5	1.4	0.17
30.0	6.50	7.0	7	179.87	0.07	0.50	0.90	1.5	1.6	0.18
60.0	7.00	8.0	7	181.4	0.08	0.52	0.92	1.6	1.7	0.21
125.0	8.00	10.1	7	182.75	0.11	0.57	0.96	1.8	1.7	0.28
9475.0	10.08	168.0	7	175.5383504	0.30	3.07	3.74	9.5	6.1	0.78
10080.0	168.00	336.0	7	158.6112512	0.31	3.07	5.28	9.5	9.5	0.79
23040.0	336.00	720.0	7	129.9419168	0.31	3.07	6.33	9.6	11.9	0.81

2", Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.913283902	125.78	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	142.88	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.19	0.2	6.547526712	139.01	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.22	0.3	6.584730826	131.45	0.00	0.02	0.01	0.1	0.0	0.01
1.2	0.25	0.3	6.596716438	128.84	0.00	0.02	0.01	0.1	0.0	0.01
0.4	0.27	0.3	6.597094637	127.94	0.00	0.03	0.01	0.1	0.0	0.01
3.4	0.28	0.3	6.576876737	123.35	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.73	0.01	0.05	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.482177912	132.71	0.01	0.06	0.01	0.1	0.0	0.02
12.0	0.63	0.8	6.630725852	149	0.01	0.09	0.02	0.2	0.0	0.03
10.0	0.83	1.0	6.788730328	156.38	0.01	0.12	0.03	0.3	0.0	0.03
5.0	1.00	1.1	6.76372264	158.99	0.01	0.14	0.04	0.4	0.0	0.04
15.0	1.08	1.3	6.858727312	159.89	0.02	0.20	0.06	0.6	0.0	0.05
1.7	1.33	1.4	7	161.51	0.02	0.20	0.07	0.6	0.0	0.05
43.3	1.36	2.1	7	163.49	0.03	0.39	0.14	1.2	0.0	0.08
23.3	2.08	2.5	7	164.75	0.04	0.44	0.19	1.4	0.1	0.10
21.7	2.47	2.8	7	166.37	0.05	0.45	0.23	1.4	0.2	0.12
70.0	2.83	4.0	7	168.44	0.07	0.48	0.39	1.5	0.5	0.17
60.0	4.00	5.0	7	170.51	0.09	0.51	0.53	1.6	0.8	0.22
60.0	5.00	6.0	7	173.57	0.11	0.54	0.69	1.7	1.1	0.27
30.0	6.00	6.5	7	177.17	0.12	0.56	0.78	1.7	1.3	0.30
30.0	6.50	7.0	7	179.87	0.13	0.58	0.79	1.8	1.3	0.33
60.0	7.00	8.0	7	181.4	0.15	0.62	0.81	1.9	1.4	0.38
125.0	8.00	10.1	7	182.75	0.19	0.70	0.86	2.2	1.4	0.49
9475.0	10.08	168.0	7	175.5383504	0.54	5.20	3.69	16.2	4.5	1.38
10080.0	168.00	336.0	7	158.6112512	0.54	5.20	5.25	16.2	8.0	1.40
23040.0	336.00	720.0	7	129.9419168	0.55	5.21	6.31	16.2	10.3	1.42

2", Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.913283902	125.78	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0 11	0.1	6.15820065	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.404049968	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.477947376	142.88	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.19	0.2	6.547526712	139.01	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.22	0.3	6.584730826	131.45	0.00	0.02	0.01	0.1	0.0	0.01
1.2	0.25	0.3	6.596716438	128.84	0.00	0.02	0.01	0.1	0.0	0.01
0.4	0.27	0.3	6.597094637	127.94	0.00	0.03	0.01	0.1	0.0	0.01
3.4	0.28	0.3	6.576876737	123.35	0.00	0.03	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.513854837	121.73	0.01	0.05	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.482177912	132.71	0.01	0.06	0.01	0.1	0.0	0.02
12.0	0.63	0.8	6.630725852	149	0.01	0.09	0.02	0.2	0.0	0.03
10.0	0.83	1.0	6.788730328	156.38	0.01	0.12	0.03	0.3	0.0	0.03
5.0	1.00	1.1	6.76372264	158.99	0.01	0.14	0.04	0.4	0.0	0.04
15.0	1.08	1.3	6.858727312	159.89	0.02	0.20	0.06	0.6	0.0	0.05
1.7	1.33	1.4	7	161.51	0.02	0.20	0.07	0.6	0.0	0.05
43.3	1.36	2.1	7	163.49	0.03	0.39	0.14	1.2	0.0	0.08
23.3	2.08	2.5	7	164.75	0.04	0.44	0.19	1.4	0.1	0.10
21.7	2.47	2.8	7	166.37	0.05	0.45	0.23	1.4	0.2	0.12
70.0	2.83	4.0	7	168.44	0.07	0.48	0.39	1.5	0.5	0.17
60.0	4.00	5.0	7	170.51	0.09	0.51	0.53	1.6	0.8	0.22
60.0	5.00	6.0	7	173.57	0.11	0.54	0.69	1.7	1.1	0.27
30.0	6.00	6.5	7	177.17	0.12	0.56	0.78	1.7	1.3	0.30
30.0	6.50	7.0	7	179.87	0.13	0.58	0.79	1.8	1.3	0.33
60.0	7.00	8.0	7	181.4	0.15	0.62	0.81	1.9	1.4	0.38
125.0	8.00	10.1	7	182.75	0.19	0.70	0.86	2.2	1.4	0.49
9475.0	10.08	168.0	7	175.5383504	0.54	5.20	3.69	16.2	4.5	1.38
10080.0	168.00	336.0	7	158.6112512	0.54	5.20	5.25	16.2	8.0	1.40
23040.0	336.00	720.0	7	129.9419168	0.55	5.21	6.31	16.2	10.3	1.42

2", Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0005	0.0040	0.0008	0.007	0.000	0.001
0.8	0.08	0.1	6.311071012	125.78	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	142.88	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.19	0.2	7.046850686	139.01	0.00	0.02	0.01	0.1	0.0	0.00
1.7	0.22	0.3	7.081712732	131.45	0.00	0.03	0.01	0.1	0.0	0.00
1.2	0.25	0.3	7.087581222	128.84	0.00	0.03	0.01	0.1	0.0	0.00
0.4	0.27	0.3	7.083238889	127.94	0.00	0.03	0.01	0.1	0.0	0.00
3.4	0.28	0.3	7.047853343	123.35	0.00	0.04	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.73	0.00	0.06	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.890580386	132.71	0.00	0.06	0.01	0.1	0.0	0.01
12.0	0.63	0.8	7.086183381	149	0.01	0.10	0.03	0.3	0.0	0.02
10.0	0.83	1.0	7.304359296	156.38	0.01	0.14	0.04	0.4	0.0	0.02
5.0	1.00	1.1	7.2904359	158.99	0.01	0.16	0.05	0.5	0.0	0.02
15.0	1.08	1.3	7.269376604	159.89	0.01	0.23	0.08	0.7	0.0	0.03
1.7	1.33	1.4	7.3	161.51	0.01	0.24	0.08	0.7	0.0	0.03
43.3	1.36	2.1	7.3	163.49	0.02	0.42	0.17	1.3	0.1	0.05
23.3	2.08	2.5	7.3	164.75	0.02	0.42	0.23	1.3	0.2	0.06
21.7	2.47	2.8	7.3	166.37	0.03	0.43	0.28	1.3	0.3	0.07
70.0	2.83	4.0	7.3	168.44	0.04	0.45	0.46	1.4	0.7	0.10
60.0	4.00	5.0	7.3	170.51	0.05	0.47	0.62	1.5	1.0	0.13
60.0	5.00	6.0	7.3	173.57	0.06	0.49	0.81	1.5	1.4	0.15
30.0	6.00	6.5	7.3	177.17	0.07	0.50	0.91	1.6	1.7	0.17
30.0	6.50	7.0	7.3	179.87	0.07	0.51	0.92	1.6	1.7	0.18
60.0	7.00	8.0	7.3	181.4	0.08	0.53	0.95	1.7	1.7	0.22
125.0	8.00	10.1	7.3	182.75	0.11	0.59	1.00	1.8	1.8	0.28
9475.0	10.08	168.0	7.3	175.5383504	0.30	3.07	4.21	9.5	7.2	0.77
10080.0	168.00	336.0	7.3	158.6112512	0.31	3.07	6.01	9.5	11.2	0.79
23040.0	336.00	720.0	7.3	129.9419168	0.31	3.07	7.25	9.6	13.9	0.81

2", Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0005	0.0040	0.0008	0.007	0.000	0.001
0.8	0.08	0.1	6.311071012	125.78	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	142.88	0.00	0.02	0.00	0.0	0.0	0.00
1.7	0.19	0.2	7.046850686	139.01	0.00	0.02	0.01	0.1	0.0	0.00
1.7	0.22	0.3	7.081712732	131.45	0.00	0.03	0.01	0.1	0.0	0.00
1.2	0.25	0.3	7.087581222	128.84	0.00	0.03	0.01	0.1	0.0	0.00
0.4	0.27	0.3	7.083238889	127.94	0.00	0.03	0.01	0.1	0.0	0.00
3.4	0.28	0.3	7.047853343	123.35	0.00	0.04	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.73	0.00	0.06	0.01	0.1	0.0	0.01
1.3	0.61	0.6	6.890580386	132.71	0.00	0.06	0.01	0.1	0.0	0.01
12.0	0.63	0.8	7.086183381	149	0.01	0.10	0.03	0.3	0.0	0.02
10.0	0.83	1.0	7.304359296	156.38	0.01	0.14	0.04	0.4	0.0	0.02
5.0	1.00	1.1	7.2904359	158.99	0.01	0.16	0.05	0.5	0.0	0.02
15.0	1.08	1.3	7.269376604	159.89	0.01	0.23	0.08	0.7	0.0	0.03
1.7	1.33	1.4	7.3	161.51	0.01	0.24	0.08	0.7	0.0	0.03
43.3	1.36	2.1	7.3	163.49	0.02	0.42	0.17	1.3	0.1	0.05
23.3	2.08	2.5	7.3	164.75	0.02	0.42	0.23	1.3	0.2	0.06
21.7	2.47	2.8	7.3	166.37	0.03	0.43	0.28	1.3	0.3	0.07
70.0	2.83	4.0	7.3	168.44	0.04	0.45	0.46	1.4	0.7	0.10
60.0	4.00	5.0	7.3	170.51	0.05	0.47	0.62	1.5	1.0	0.13
60.0	5.00	6.0	7.3	173.57	0.06	0.49	0.81	1.5	1.4	0.15
30.0	6.00	6.5	7.3	177.17	0.07	0.50	0.91	1.6	1.7	0.17
30.0	6.50	7.0	7.3	179.87	0.07	0.51	0.92	1.6	1.7	0.18
60.0	7.00	8.0	7.3	181.4	0.08	0.53	0.95	1.7	1.7	0.22
125.0	8.00	10.1	7.3	182.75	0.11	0.59	1.00	1.8	1.8	0.28
9475.0	10.08	168.0	7.3	175.5383504	0.30	3.07	4.21	9.5	7.2	0.77
10080.0	168.00	336.0	7.3	158.6112512	0.31	3.07	6.01	9.5	11.2	0.79
23040.0	336.00	720.0	7.3	129.9419168	0.31	3.07	7.25	9.6	13.9	0.81

2", Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.311071012	125.78	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	142.88	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.19	0.2	7.046850686	139.01	0.00	0.02	0.01	0.1	0.0	0.01
1.7	0.22	0.3	7.081712732	131.45	0.00	0.03	0.01	0.1	0.0	0.01
1.2	0.25	0.3	7.087581222	128.84	0.00	0.03	0.01	0.1	0.0	0.01
0.4	0.27	0.3	7.083238889	127.94	0.00	0.03	0.01	0.1	0.0	0.01
3.4	0.28	0.3	7.047853343	123.35	0.00	0.04	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.73	0.01	0.06	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.890580386	132.71	0.01	0.07	0.01	0.1	0.0	0.02
12.0	0.63	0.8	7.086183381	149	0.01	0.11	0.03	0.3	0.0	0.03
10.0	0.83	1.0	7.304359296	156.38	0.01	0.15	0.04	0.4	0.0	0.03
5.0	1.00	1.1	7.2904359	158.99	0.01	0.17	0.05	0.5	0.0	0.04
15.0	1.08	1.3	7.269376604	159.89	0.02	0.24	0.08	0.7	0.0	0.05
1.7	1.33	1.4	7.3	161.51	0.02	0.24	0.08	0.8	0.0	0.05
43.3	1.36	2.1	7.3	163.49	0.03	0.44	0.17	1.4	0.1	0.08
23.3	2.08	2.5	7.3	164.75	0.04	0.45	0.23	1.4	0.2	0.10
21.7	2.47	2.8	7.3	166.37	0.05	0.46	0.28	1.4	0.3	0.12
70.0	2.83	4.0	7.3	168.44	0.07	0.49	0.46	1.5	0.7	0.18
60.0	4.00	5.0	7.3	170.51	0.09	0.53	0.62	1.6	1.0	0.23
60.0	5.00	6.0	7.3	173.57	0.11	0.56	0.81	1.7	1.4	0.28
30.0	6.00	6.5	7.3	177.17	0.12	0.58	0.91	1.8	1.6	0.30
30.0	6.50	7.0	7.3	179.87	0.13	0.60	0.93	1.9	1.6	0.33
60.0	7.00	8.0	7.3	181.4	0.15	0.64	0.95	2.0	1.7	0.39
125.0	8.00	10.1	7.3	182.75	0.20	0.74	1.01	2.3	1.7	0.50
9475.0	10.08	168.0	7.3	175.5383504	0.54	5.20	4.28	16.2	5.8	1.38
10080.0	168.00	336.0	7.3	158.6112512	0.54	5.20	6.10	16.2	9.8	1.39
23040.0	336.00	720.0	7.3	129.9419168	0.55	5.21	7.34	16.2	12.6	1.42

2", Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.311071012	125.78	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	133.52	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	136.58	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	139.1	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	141.53	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.15	0.2	6.889383537	143.24	0.00	0.01	0.00	0.0	0.0	0.00
1.6	0.17	0.2	6.972213054	142.88	0.00	0.02	0.00	0.0	0.0	0.01
1.7	0.19	0.2	7.046850686	139.01	0.00	0.02	0.01	0.1	0.0	0.01
1.7	0.22	0.3	7.081712732	131.45	0.00	0.03	0.01	0.1	0.0	0.01
1.2	0.25	0.3	7.087581222	128.84	0.00	0.03	0.01	0.1	0.0	0.01
0.4	0.27	0.3	7.083238889	127.94	0.00	0.03	0.01	0.1	0.0	0.01
3.4	0.28	0.3	7.047853343	123.35	0.00	0.04	0.01	0.1	0.0	0.01
16.7	0.33	0.6	6.944966477	121.73	0.01	0.06	0.01	0.1	0.0	0.02
1.3	0.61	0.6	6.890580386	132.71	0.01	0.07	0.01	0.1	0.0	0.02
12.0	0.63	0.8	7.086183381	149	0.01	0.11	0.03	0.3	0.0	0.03
10.0	0.83	1.0	7.304359296	156.38	0.01	0.15	0.04	0.4	0.0	0.03
5.0	1.00	1.1	7.2904359	158.99	0.01	0.17	0.05	0.5	0.0	0.04
15.0	1.08	1.3	7.269376604	159.89	0.02	0.24	0.08	0.7	0.0	0.05
1.7	1.33	1.4	7.3	161.51	0.02	0.24	0.08	0.8	0.0	0.05
43.3	1.36	2.1	7.3	163.49	0.03	0.44	0.17	1.4	0.1	0.08
23.3	2.08	2.5	7.3	164.75	0.04	0.45	0.23	1.4	0.2	0.10
21.7	2.47	2.8	7.3	166.37	0.05	0.46	0.28	1.4	0.3	0.12
70.0	2.83	4.0	7.3	168.44	0.07	0.49	0.46	1.5	0.7	0.18
60.0	4.00	5.0	7.3	170.51	0.09	0.53	0.62	1.6	1.0	0.23
60.0	5.00	6.0	7.3	173.57	0.11	0.56	0.81	1.7	1.4	0.28
30.0	6.00	6.5	7.3	177.17	0.12	0.58	0.91	1.8	1.6	0.30
30.0	6.50	7.0	7.3	179.87	0.13	0.60	0.93	1.9	1.6	0.33
60.0	7.00	8.0	7.3	181.4	0.15	0.64	0.95	2.0	1.7	0.39
125.0	8.00	10.1	7.3	182.75	0.20	0.74	1.01	2.3	1.7	0.50
9475.0	10.08	168.0	7.3	175.5383504	0.54	5.20	4.28	16.2	5.8	1.38
10080.0	168.00	336.0	7.3	158.6112512	0.54	5.20	6.10	16.2	9.8	1.39
23040.0	336.00	720.0	7.3	129.9419168	0.55	5.21	7.35	16.2	12.6	1.42

4", Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.913283902	134.33	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	154.04	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	161.69	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	163.85	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	158.36	0.00	0.01	0.00	0.0	0.0	0.00
0.4	0.15	0.2	6.387993244	150.62	0.00	0.02	0.01	0.0	0.0	0.01
0.5	0.16	0.2	6.419954683	149	0.00	0.02	0.01	0.1	0.0	0.01
0.6	0.17	0.2	6.455062124	138.02	0.00	0.02	0.01	0.1	0.0	0.01
0.4	0.18	0.2	6.483736627	125.06	0.00	0.02	0.01	0.1	0.0	0.01
4.0	0.18	0.3	6.545195943	123.44	0.00	0.02	0.01	0.1	0.0	0.01
3.9	0.25	0.3	6.585072707	122.9	0.00	0.03	0.01	0.1	0.0	0.01
3.6	0.31	0.4	6.544782367	125.42	0.00	0.04	0.01	0.1	0.0	0.01
2.1	0.37	0.4	6.496826104	137.93	0.00	0.04	0.01	0.1	0.0	0.01
5.5	0.41	0.5	6.451044746	154.85	0.01	0.06	0.02	0.2	0.0	0.02
10.0	0.50	0.7	6.479025976	165.83	0.01	0.09	0.03	0.3	0.0	0.02
10.0	0.67	0.8	6.651001912	170.42	0.01	0.14	0.05	0.4	0.0	0.03
15.0	0.83	1.1	6.742462312	170.42	0.02	0.20	0.08	0.6	0.0	0.04
15.0	1.08	1.3	6.858727312	169.61	0.02	0.27	0.12	0.8	0.1	0.06
1.7	1.33	1.4	7	169.61	0.02	0.28	0.12	0.9	0.1	0.06
43.3	1.36	2.1	7	172.94	0.04	0.44	0.23	1.4	0.2	0.09
45.0	2.08	2.8	7	177.62	0.05	0.47	0.37	1.5	0.5	0.13
23.3	2.83	3.2	7	180.59	0.06	0.49	0.45	1.5	0.7	0.15
23.3	3.22	3.6	7	182.66	0.07	0.50	0.54	1.6	0.8	0.18
23.3	3.61	4.0	7	183.74	0.08	0.52	0.63	1.6	1.0	0.20
60.0	4.00	5.0	7	185.27	0.10	0.56	0.88	1.7	1.5	0.25
60.0	5.00	6.0	7	186.44	0.12	0.60	1.13	1.9	2.1	0.31
30.0	6.00	6.5	7	186.62	0.13	0.63	1.26	1.9	2.4	0.34
30.0	6.50	7.0	7	187.97	0.14	0.65	1.27	2.0	2.4	0.37
60.0	7.00	8.0	7	190.94	0.17	0.70	1.30	2.2	2.4	0.43
125.0	8.00	10.1	7	193.01	0.21	0.81	1.37	2.5	2.5	0.55
13795.0	10.08	240.0	7	179.7944072	0.54	5.20	6.19	16.2	10.0	1.39
28800.0	240.00	720.0	7	138.1550288	0.55	5.21	8.08	16.2	14.2	1.42

4", Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.913283902	134.33	0.00	0.00	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.04486805	154.04	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.15820065	161.69	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.254856688	163.85	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.33633299	158.36	0.00	0.01	0.00	0.0	0.0	0.00
0.4	0.15	0.2	6.387993244	150.62	0.00	0.02	0.01	0.0	0.0	0.01
0.5	0.16	0.2	6.419954683	149	0.00	0.02	0.01	0.1	0.0	0.01
0.6	0.17	0.2	6.455062124	138.02	0.00	0.02	0.01	0.1	0.0	0.01
0.4	0.18	0.2	6.483736627	125.06	0.00	0.02	0.01	0.1	0.0	0.01
4.0	0.18	0.3	6.545195943	123.44	0.00	0.02	0.01	0.1	0.0	0.01
3.9	0.25	0.3	6.585072707	122.9	0.00	0.03	0.01	0.1	0.0	0.01
3.6	0.31	0.4	6.544782367	125.42	0.00	0.04	0.01	0.1	0.0	0.01
2.1	0.37	0.4	6.496826104	137.93	0.00	0.04	0.01	0.1	0.0	0.01
5.5	0.41	0.5	6.451044746	154.85	0.01	0.06	0.02	0.2	0.0	0.02
10.0	0.50	0.7	6.479025976	165.83	0.01	0.09	0.03	0.3	0.0	0.02
10.0	0.67	0.8	6.651001912	170.42	0.01	0.14	0.05	0.4	0.0	0.03
15.0	0.83	1.1	6.742462312	170.42	0.02	0.20	0.08	0.6	0.0	0.04
15.0	1.08	1.3	6.858727312	169.61	0.02	0.27	0.12	0.8	0.1	0.06
1.7	1.33	1.4	7	169.61	0.02	0.28	0.12	0.9	0.1	0.06
43.3	1.36	2.1	7	172.94	0.04	0.44	0.23	1.4	0.2	0.09
45.0	2.08	2.8	7	177.62	0.05	0.47	0.37	1.5	0.5	0.13
23.3	2.83	3.2	7	180.59	0.06	0.49	0.45	1.5	0.7	0.15
23.3	3.22	3.6	7	182.66	0.07	0.50	0.54	1.6	0.8	0.18
23.3	3.61	4.0	7	183.74	0.08	0.52	0.63	1.6	1.0	0.20
60.0	4.00	5.0	7	185.27	0.10	0.56	0.88	1.7	1.5	0.25
60.0	5.00	6.0	7	186.44	0.12	0.60	1.13	1.9	2.1	0.31
30.0	6.00	6.5	7	186.62	0.13	0.63	1.26	1.9	2.4	0.34
30.0	6.50	7.0	7	187.97	0.14	0.65	1.27	2.0	2.4	0.37
60.0	7.00	8.0	7	190.94	0.17	0.70	1.30	2.2	2.4	0.43
125.0	8.00	10.1	7	193.01	0.22	0.81	1.37	2.5	2.5	0.55
13795.0	10.08	240.0	7	179.7944072	0.54	5.20	6.19	16.2	10.0	1.39
28800.0	240.00	720.0	7	138.1550288	0.55	5.21	8.09	16.2	14.3	1.42

4", Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.8	0.08	0.1	5.913283902	134.33	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.10	0.1	6.04486805	154.04	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.11	0.1	6.15820065	161.69	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.13	0.1	6.254856688	163.85	0.01	0.01	0.00	0.0	0.0	0.01
0.8	0.14	0.2	6.33633299	158.36	0.01	0.02	0.00	0.0	0.0	0.02
0.4	0.15	0.2	6.387993244	150.62	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.16	0.2	6.419954683	149	0.01	0.02	0.01	0.1	0.0	0.02
0.6	0.17	0.2	6.455062124	138.02	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.483736627	125.06	0.01	0.02	0.01	0.1	0.0	0.02
4.0	0.18	0.3	6.545195943	123.44	0.01	0.03	0.01	0.1	0.0	0.03
3.9	0.25	0.3	6.585072707	122.9	0.01	0.04	0.01	0.1	0.0	0.03
3.6	0.31	0.4	6.544782367	125.42	0.01	0.04	0.01	0.1	0.0	0.04
2.1	0.37	0.4	6.496826104	137.93	0.02	0.05	0.01	0.1	0.0	0.04
5.5	0.41	0.5	6.451044746	154.85	0.02	0.07	0.02	0.2	0.0	0.05
10.0	0.50	0.7	6.479025976	165.83	0.03	0.11	0.03	0.3	0.0	0.08
10.0	0.67	0.8	6.651001912	170.42	0.04	0.16	0.05	0.5	0.0	0.10
15.0	0.83	1.1	6.742462312	170.42	0.05	0.24	0.08	0.8	0.0	0.14
15.0	1.08	1.3	6.858727312	169.61	0.07	0.33	0.12	1.0	0.0	0.18
1.7	1.33	1.4	7	169.61	0.07	0.34	0.12	1.1	0.0	0.18
43.3	1.36	2.1	7	172.94	0.12	0.55	0.24	1.7	0.1	0.30
45.0	2.08	2.8	7	177.62	0.17	0.64	0.38	2.0	0.4	0.43
23.3	2.83	3.2	7	180.59	0.19	0.68	0.46	2.1	0.5	0.49
23.3	3.22	3.6	7	182.66	0.22	0.73	0.54	2.3	0.7	0.56
23.3	3.61	4.0	7	183.74	0.25	0.79	0.64	2.4	0.9	0.63
60.0	4.00	5.0	7	185.27	0.31	0.92	0.88	2.9	1.3	0.81
60.0	5.00	6.0	7	186.44	0.39	1.06	1.14	3.3	1.8	0.99
30.0	6.00	6.5	7	186.62	0.42	1.13	1.27	3.5	2.0	1.08
30.0	6.50	7.0	7	187.97	0.46	1.21	1.29	3.8	2.0	1.18
60.0	7.00	8.0	7	190.94	0.53	1.37	1.32	4.2	2.0	1.36
125.0	8.00	10.1	7	193.01	0.68	1.71	1.40	5.3	1.9	1.76
13795.0	10.08	240.0	7	179.7944072	1.71	15.88	6.66	49.4	3.5	4.42
28800.0	240.00	720.0	7	138.1550288	1.73	15.88	8.53	49.4	7.6	4.46

4", Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.8	0.08	0.1	5.913283902	134.33	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.10	0.1	6.04486805	154.04	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.11	0.1	6.15820065	161.69	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.13	0.1	6.254856688	163.85	0.01	0.01	0.00	0.0	0.0	0.01
0.8	0.14	0.2	6.33633299	158.36	0.01	0.02	0.00	0.0	0.0	0.02
0.4	0.15	0.2	6.387993244	150.62	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.16	0.2	6.419954683	149	0.01	0.02	0.01	0.1	0.0	0.02
0.6	0.17	0.2	6.455062124	138.02	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.483736627	125.06	0.01	0.02	0.01	0.1	0.0	0.02
4.0	0.18	0.3	6.545195943	123.44	0.01	0.03	0.01	0.1	0.0	0.03
3.9	0.25	0.3	6.585072707	122.9	0.01	0.04	0.01	0.1	0.0	0.03
3.6	0.31	0.4	6.544782367	125.42	0.01	0.04	0.01	0.1	0.0	0.04
2.1	0.37	0.4	6.496826104	137.93	0.02	0.05	0.01	0.1	0.0	0.04
5.5	0.41	0.5	6.451044746	154.85	0.02	0.07	0.02	0.2	0.0	0.05
10.0	0.50	0.7	6.479025976	165.83	0.03	0.11	0.03	0.3	0.0	0.08
10.0	0.67	0.8	6.651001912	170.42	0.04	0.16	0.05	0.5	0.0	0.10
15.0	0.83	1.1	6.742462312	170.42	0.05	0.24	0.08	0.8	0.0	0.14
15.0	1.08	1.3	6.858727312	169.61	0.07	0.33	0.12	1.0	0.0	0.18
1.7	1.33	1.4	7	169.61	0.07	0.34	0.12	1.1	0.0	0.18
43.3	1.36	2.1	7	172.94	0.12	0.55	0.24	1.7	0.1	0.30
45.0	2.08	2.8	7	177.62	0.17	0.64	0.38	2.0	0.4	0.43
23.3	2.83	3.2	7	180.59	0.19	0.68	0.46	2.1	0.5	0.49
23.3	3.22	3.6	7	182.66	0.22	0.73	0.54	2.3	0.7	0.56
23.3	3.61	4.0	7	183.74	0.25	0.79	0.64	2.4	0.9	0.63
60.0	4.00	5.0	7	185.27	0.32	0.92	0.88	2.9	1.3	0.81
60.0	5.00	6.0	7	186.44	0.39	1.06	1.14	3.3	1.8	1.00
30.0	6.00	6.5	7	186.62	0.42	1.13	1.27	3.5	2.0	1.09
30.0	6.50	7.0	7	187.97	0.46	1.21	1.29	3.8	2.0	1.18
60.0	7.00	8.0	7	190.94	0.53	1.37	1.32	4.2	2.0	1.37
125.0	8.00	10.1	7	193.01	0.69	1.71	1.40	5.3	1.9	1.77
13795.0	10.08	240.0	7	179.7944072	1.71	15.88	6.66	49.4	3.5	4.42
28800.0	240.00	720.0	7	138.1550288	1.73	15.88	8.56	49.4	7.7	4.46

4", Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.311071012	134.33	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	154.04	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	161.69	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	163.85	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	158.36	0.00	0 02	0.01	0.1	0.0	0.00
0.4	0.15	0.2	6.871130575	150.62	0.00	0.02	0.01	0.1	0.0	0.01
0.5	0.16	0.2	6.907593351	149	0.00	0 02	0.01	0.1	0.0	0.01
0.6	0.17	0.2	6.947225242	138.02	0.00	0.02	0.01	0.1	0.0	0.01
0.4	0.18	0.2	6.979204489	125.06	0.00	0.02	0.01	0.1	0.0	0.01
4.0	0.18	0.3	7.040602867	123.44	0.00	0.03	0.01	0.1	0.0	0.01
3.9	0.25	0.3	7.065630281	122.9	0.00	0.04	0.01	0.1	0.0	0.01
3.6	0.31	0.4	6.996542817	125.42	0.00	0.04	0.01	0.1	0.0	0.01
2.1	0.37	0.4	6.925300642	137.93	0.01	0.05	0.01	0.1	0.0	0.01
5.5	0.41	0.5	6.85887723	154.85	0.01	0.07	0.02	0.2	0.0	0.02
10.0	0.50	0.7	6.888575232	165.83	0.01	0.11	0.04	0.3	0.0	0.02
10.0	0.67	0.8	7.112459904	170.42	0.01	0.16	0.06	0.5	0.0	0.03
15.0	0.83	1.1	7.252676604	170.42	0.02	0.24	0.10	0.8	0.1	0.05
15.0	1.08	1.3	7.269376604	169.61	0.02	0.33	0.14	1.0	0.1	0.06
1.7	1.33	1.4	7.3	169.61	0.02	0.34	0.15	1.0	0.1	0.06
43.3	1.36	2.1	7.3	172.94	0.04	0.45	0.28	1.4	0.3	0.10
45.0	2.08	2.8	7.3	177.62	0.05	0.48	0.44	1.5	0.6	0.14
23.3	2.83	3.2	7.3	180.59	0.06	0.50	0.53	1.5	0.8	0.16
23.3	3.22	3.6	7.3	182.66	0.07	0.52	0.63	1.6	1.0	0.18
23.3	3.61	4.0	7.3	183.74	0.08	0.53	0.74	1.7	1.3	0.20
60.0	4.00	5.0	7.3	185.27	0.10	0.58	1.02	1.8	1.9	0.26
60.0	5.00	6.0	7.3	186.44	0.12	0.63	1.31	2.0	2.5	0.32
30.0	6.00	6.5	7.3	186.62	0.13	0.65	1.46	2.0	2.8	0.35
30.0	6.50	7.0	7.3	187.97	0.15	0.68	1.48	2.1	2.8	0.38
60.0	7.00	8.0	7.3	190.94	0.17	0.74	1.51	2.3	2.8	0.44
125.0	8.00	10.1	7.3	193.01	0.22	0.86	1.59	2.7	2.9	0.56
13795.0	10.08	240.0	7.3	179.7944072	0.54	5.20	7.15	16.2	12.2	1.39
28800.0	240.00	720.0	7.3	138.1550288	0.55	5.21	9.39	16.2	17.1	1.42

4", Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.311071012	134.33	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.10	0.1	6.468259688	154.04	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.11	0.1	6.602748676	161.69	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.13	0.1	6.716523872	163.85	0.00	0.01	0.00	0.0	0.0	0.00
0.8	0.14	0.2	6.811472141	158.36	0.00	0.02	0.01	0.1	0.0	0.00
0.4	0.15	0.2	6.871130575	150.62	0.00	0.02	0.01	0.1	0.0	0.01
0.5	0.16	0.2	6.907593351	149	0.00	0.02	0.01	0.1	0.0	0.01
0.6	0.17	0.2	6.947225242	138.02	0.00	0.02	0.01	0.1	0.0	0.01
0.4	0.18	0.2	6.979204489	125.06	0.00	0.02	0.01	0.1	0.0	0.01
4.0	0.18	0.3	7.040602867	123.44	0.00	0.03	0.01	0.1	0.0	0.01
3.9	0.25	0.3	7.065630281	122.9	0.00	0.04	0.01	0.1	0.0	0.01
3.6	0.31	0.4	6.996542817	125.42	0.00	0.04	0.01	0.1	0.0	0.01
2.1	0.37	0.4	6.925300642	137.93	0.01	0.05	0.01	0.1	0.0	0.01
5.5	0.41	0.5	6.85887723	154.85	0.01	0.07	0.02	0.2	0.0	0.02
10.0	0.50	0.7	6.888575232	165.83	0.01	0.11	0.04	0.3	0.0	0.02
10.0	0.67	0.8	7.112459904	170.42	0.01	0.16	0.06	0.5	0.0	0.03
15.0	0.83	1.1	7.252676604	170.42	0.02	0.24	0.10	0.8	0.1	0.05
15.0	1.08	1.3	7.269376604	169.61	0.02	0.33	0.14	1.0	0.1	0.06
1.7	1.33	1.4	7.3	169.61	0.02	0.34	0.15	1.0	0.1	0.06
43.3	1.36	2.1	7.3	172.94	0.04	0.45	0.28	1.4	0.3	0.10
45.0	2.08	2.8	7.3	177.62	0.05	0.48	0.44	1.5	0.6	0.14
23.3	2.83	3.2	7.3	180.59	0.06	0.50	0.53	1.5	0.8	0.16
23.3	3.22	3.6	7.3	182.66	0.07	0.52	0.63	1.6	1.0	0.18
23.3	3.61	4.0	7.3	183.74	0.08	0.53	0.74	1.7	1.3	0.20
60.0	4.00	5.0	7.3	185.27	0.10	0.58	1.02	1.8	1.9	0.26
60.0	5.00	6.0	7.3	186.44	0.12	0.63	1.31	2.0	2.5	0.32
30.0	6.00	6.5	7.3	186.62	0.13	0.65	1.46	2.0	2.8	0.35
30.0	6.50	7.0	7.3	187.97	0.15	0.68	1.48	2.1	2.8	0.38
60.0	7.00	8.0	7.3	190.94	0.17	0.74	1.51	2.3	2.8	0.44
125.0	8.00	10.1	7.3	193.01	0.22	0.86	1.59	2.7	2.9	0.57
13795.0	10.08	240.0	7.3	179.7944072	0.54	5.20	7.15	16.2	12.2	1.39
28800.0	240.00	720.0	7.3	138.1550288	0.55	5.21	9.39	16.2	17.1	1.42

4", Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.8	0.08	0.1	6.311071012	134.33	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.10	0.1	6.468259688	154.04	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.11	0.1	6.602748676	161.69	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.13	0.1	6.716523872	163.85	0.01	0.02	0.00	0.0	0.0	0.01
0.8	0.14	0.2	6.811472141	158.36	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.15	0.2	6.871130575	150.62	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.16	0.2	6.907593351	149	0.01	0.02	0.01	0.1	0.0	0.02
0.6	0.17	0.2	6.947225242	138.02	0.01	0.03	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.979204489	125.06	0.01	0.03	0.01	0.1	0.0	0.02
4.0	0.18	0.3	7.040602867	123.44	0.01	0.03	0.01	0.1	0.0	0.03
3.9	0.25	0.3	7.065630281	122.9	0.01	0.04	0.01	0.1	0.0	0.03
3.6	0.31	0.4	6.996542817	125.42	0.01	0.05	0.01	0.1	0.0	0.04
2.1	0.37	0.4	6.925300642	137.93	0.02	0.06	0.01	0.1	0.0	0.04
5.5	0.41	0.5	6.85887723	154.85	0.02	0.08	0.02	0.2	0.0	0.05
10.0	0.50	0.7	6.888575232	165.83	0.03	0.13	0.04	0.4	0.0	0.08
10.0	0.67	0.8	7.112459904	170.42	0.04	0.19	0.06	0.6	0.0	0.11
15.0	0.83	1.1	7.252676604	170.42	0.06	0.29	0.10	0.9	0.0	0.15
15.0	1.08	1.3	7.269376604	169.61	0.07	0.39	0.14	1.2	0.0	0.18
1.7	1.33	1.4	7.3	169.61	0.07	0.40	0.15	1.3	0.0	0.19
43.3	1.36	2.1	7.3	172.94	0.12	0.58	0.28	1.8	0.2	0.31
45.0	2.08	2.8	7.3	177.62	0.17	0.67	0.44	2.1	0.5	0.44
23.3	2.83	3.2	7.3	180.59	0.20	0.72	0.54	2.3	0.7	0.51
23.3	3.22	3.6	7.3	182.66	0.22	0.78	0.64	2.4	0.9	0.58
23.3	3.61	4.0	7.3	183.74	0.25	0.84	0.74	2.6	1.1	0.65
60.0	4.00	5.0	7.3	185.27	0.32	0.99	1.03	3.1	1.6	0.83
60.0	5.00	6.0	7.3	186.44	0.39	1.15	1.33	3.6	2.1	1.01
30.0	6.00	6.5	7.3	186.62	0.43	1.23	1.48	3.8	2.4	1.11
30.0	6.50	7.0	7.3	187.97	0.47	1.31	1.49	4.1	2.4	1.20
60.0	7.00	8.0	7.3	190.94	0.54	1.49	1.53	4.6	2.3	1.39
125.0	8.00	10.1	7.3	193.01	0.70	1.87	1.62	5.8	2.3	1.80
13795.0	10.08	240.0	7.3	179.7944072	1.71	15.88	7.68	49.4	5.8	4.42
28800.0	240.00	720.0	7.3	138.1550288	1.73	15.88	9.88	49.4	10.7	4.45

4", Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.8	0.08	0.1	6.311071012	134.33	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.10	0.1	6.468259688	154.04	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.11	0.1	6.602748676	161.69	0.00	0.01	0.00	0.0	0.0	0.01
0.8	0.13	0.1	6.716523872	163.85	0.01	0.02	0.00	0.0	0.0	0.01
0.8	0.14	0.2	6.811472141	158.36	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.15	0.2	6.871130575	150.62	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.16	0.2	6.907593351	149	0.01	0.02	0.01	0.1	0.0	0.02
0.6	0.17	0.2	6.947225242	138.02	0.01	0.03	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.979204489	125.06	0.01	0.03	0.01	0.1	0.0	0.02
4.0	0.18	0.3	7.040602867	123.44	0.01	0.03	0.01	0.1	0.0	0.03
3.9	0.25	0.3	7.065630281	122.9	0.01	0.04	0.01	0.1	0.0	0.03
3.6	0.31	0.4	6.996542817	125.42	0.01	0.05	0.01	0.1	0.0	0.04
2.1	0.37	0.4	6.925300642	137.93	0.02	0.06	0.01	0.1	0.0	0.04
5.5	0.41	0.5	6.85887723	154.85	0.02	0.08	0.02	0.2	0.0	0.05
10.0	0.50	0.7	6.888575232	165.83	0.03	0.13	0.04	0.4	0.0	0.08
10.0	0.67	0.8	7.112459904	170.42	0.04	0.19	0.06	0.6	0.0	0.11
15.0	0.83	1.1	7.252676604	170.42	0.06	0.29	0.10	0.9	0.0	0.15
15.0	1.08	1.3	7.269376604	169.61	0.07	0.39	0.14	1.2	0.0	0.18
1.7	1.33	1.4	7.3	169.61	0.07	0.40	0.15	1.3	0.0	0.19
43.3	1.36	2.1	7.3	172.94	0.12	0.58	0.28	1.8	0.2	0.31
45.0	2.08	2.8	7.3	177.62	0.17	0.67	0.44	2.1	0.5	0.44
23.3	2.83	3.2	7.3	180.59	0.20	0.72	0.54	2.3	0.7	0.51
23.3	3.22	3.6	7.3	182.66	0.22	0.78	0.64	2.4	0.9	0.58
23.3	3.61	4.0	7.3	183.74	0.25	0.84	0.74	2.6	1.1	0.65
60.0	4.00	5.0	7.3	185.27	0.32	0.99	1.03	3.1	1.6	0.83
60.0	5.00	6.0	7.3	186.44	0.39	1.15	1.33	3.6	2.1	1.02
30.0	6.00	6.5	7.3	186.62	0.43	1.23	1.48	3.8	2.4	1.11
30.0	6.50	7.0	7.3	187.97	0.47	1.31	1.49	4.1	2.4	1.20
60.0	7.00	8.0	7.3	190.94	0.54	1.49	1.53	4.6	2.3	1.39
125.0	8.00	10.1	7.3	193.01	0.70	1.87	1.62	5.8	2.3	1.80
13795.0	10.08	240.0	7.3	179.7944072	1.71	15.88	7.69	49.4	5.8	4.42
28800.0	240.00	720.0	7.3	138.1550288	1.73	15.88	9.92	49.4	10.7	4.45

6", Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.910650105	143.6	0.00	0.01	0.00	0.0	0.0	0.00
0.4	0.10	0.1	6.006839056	170.24	0.00	0.01	0.00	0.0	0.0	0.00
0.7	0.10	0.1	6.084363576	175.55	0.00	0.01	0.00	0.0	0.0	0.00
1.3	0.11	0.1	6.20603231	169.52	0.00	0.01	0.01	0.0	0.0	0.00
0.4	0.14	0.1	6.298756102	162.68	0.00	0.01	0.01	0.0	0.0	0.00
0.5	0.14	0.2	6.341128285	145.67	0.00	0.02	0.01	0.0	0.0	0.01
5.5	0.15	0.2	6.477433739	125.51	0.00	0.02	0.01	0.1	0.0	0.01
2.0	0.24	0.3	6.594304412	123.8	0.00	0.03	0.01	0.1	0.0	0.01
1.5	0.27	0.3	6.59153595	126.32	0.00	0.03	0.01	0.1	0.0	0.01
0.8	0.30	0.3	6.581375512	130.37	0.00	0.03	0.01	0.1	0.0	0.01
1.1	0.31	0.3	6.568635911	140	0.00	0.03	0.01	0.1	0.0	0.01
0.2	0.33	0.3	6.55900002	153.14	0.00	0.03	0.01	0.1	0.0	0.01
1.6	0.33	0.4	6.54367755	158.63	0.00	0.04	0.01	0.1	0.0	0.01
8.4	0.36	0.5	6.476768838	162.05	0.01	0.07	0.03	0.2	0.0	0.02
10.0	0.50	0.7	6.479025976	169.7	0.01	0.11	0.05	0.3	0.0	0.03
10.0	0.67	0.8	6.651001912	175.1	0.01	0.15	0.07	0.5	0.1	0.03
10.0	0.83	1.0	6.788730328	173.03	0.02	0.20	0.09	0.6	0.1	0.04
5.0	1.00	1.1	6.76372264	169.16	0.02	0.23	0.10	0.7	0.1	0.05
15.0	1.08	1.3	6.858727312	167.99	0.02	0.29	0.14	0.9	0.1	0.06
68.3	1.33	2.5	7	169.07	0.04	0.46	0.30	1.4	0.3	0.11
45.0	2.47	3.2	7	170.33	0.06	0.48	0.40	1.5	0.5	0.15
23.3	3.22	3.6	7	169.61	0.07	0.49	0.45	1.5	0.6	0.17
23.3	3.61	4.0	7	167.27	0.07	0.50	0.49	1.6	0.7	0.19
60.0	4.00	5.0	7	165.11	0.09	0.52	0.60	1.6	1.0	0.23
24.2	5.00	5.4	7	162.23	0.10	0.53	0.64	1.7	1.0	0.25
35.8	5.40	6.0	7	159.08	0.11	0.55	0.69	1.7	1.1	0.28
17.5	6.00	6.3	7	157.46	0.11	0.55	0.71	1.7	1.2	0.29
6.7	6.29	6.4	7	154.13	0.11	0.55	0.72	1.7	1.2	0.29
5.8	6.40	6.5	7	152.06	0.12	0.56	0.73	1.7	1.2	0.30
10.0	6.50	6.7	7	158.09	0.12	0.56	0.73	1.7	1.2	0.31
20.0	6.67	7.0	7	162.32	0.12	0.57	0.73	1.8	1.2	0.32
42780.0	7.00	720.0	7	135.617	0.55	5.21	3.28	16.2	3.6	1.41

6", Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.8	0.08	0.1	5.910650105	143.6	0.00	0.01	0.00	0.0	0.0	0.00
0.4	0.10	0.1	6.006839056	170.24	0.00	0.01	0.00	0.0	0.0	0.00
0.7	0.10	0.1	6.084363576	175.55	0.00	0.01	0.00	0.0	0.0	0.00
1.3	0.11	0.1	6.20603231	169.52	0.00	0.01	0.01	0.0	0.0	0.00
0.4	0.14	0.1	6.298756102	162.68	0.00	0.01	0.01	0.0	0.0	0.00
0.5	0.14	0.2	6.341128285	145.67	0.00	0.02	0.01	0.0	0.0	0.01
5.5	0.15	0.2	6.477433739	125.51	0.00	0.02	0.01	0.1	0.0	0.01
2.0	0.24	0.3	6.594304412	123.8	0.00	0.03	0.01	0.1	0.0	0.01
1.5	0.27	0.3	6.59153595	126.32	0.00	0.03	0.01	0.1	0.0	0.01
0.8	0.30	0.3	6.581375512	130.37	0.00	0.03	0.01	0.1	0.0	0.01
1.1	0.31	0.3	6.568635911	140	0.00	0.03	0.01	0.1	0.0	0.01
0.2	0.33	0.3	6.55900002	153.14	0.00	0.03	0.01	0.1	0.0	0.01
1.6	0.33	0.4	6.54367755	158.63	0.00	0.04	0.01	0.1	0.0	0.01
8.4	0.36	0.5	6.476768838	162.05	0.01	0.07	0.03	0.2	0.0	0.02
10.0	0.50	0.7	6.479025976	169.7	0.01	0.11	0.05	0.3	0.0	0.03
10.0	0.67	0.8	6.651001912	175.1	0.01	0.15	0.07	0.5	0.1	0.03
10.0	0.83	1.0	6.788730328	173.03	0.02	0.20	0.09	0.6	0.1	0.04
5.0	1.00	1.1	6.76372264	169.16	0.02	0.23	0.10	0.7	0.1	0.05
15.0	1.08	1.3	6.858727312	167.99	0.02	0.29	0.14	0.9	0.1	0.06
68.3	1.33	2.5	7	169.07	0.04	0.46	0.30	1.4	0.3	0.11
45.0	2.47	3.2	7	170.33	0.06	0.48	0.40	1.5	0.5	0.15
23.3	3.22	3.6	7	169.61	0.07	0.49	0.45	1.5	0.6	0.17
23.3	3.61	4.0	7	167.27	0.07	0.50	0.49	1.6	0.7	0.19
60.0	4.00	5.0	7	165.11	0.09	0.52	0.60	1.6	1.0	0.23
24.2	5.00	5.4	7	162.23	0.10	0.53	0.64	1.7	1.0	0.25
35.8	5.40	6.0	7	159.08	0.11	0.55	0.69	1.7	1.1	0.28
17.5	6.00	6.3	7	157.46	0.11	0.55	0.71	1.7	1.2	0.29
6.7	6.29	6.4	7	154.13	0.11	0.55	0.72	1.7	1.2	0.29
5.8	6.40	6.5	7	152.06	0.12	0.56	0.73	1.7	1.2	0.30
10.0	6.50	6.7	7	158.09	0.12	0.56	0.73	1.7	1.2	0.31
20.0	6.67	7.0	7	162.32	0.12	0.57	0.73	1.8	1.2	0.32
42780.0	7.00	720.0	7	135.617	0.55	5.21	3.28	16.2	3.6	1.41

6", Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.8	0.08	0.1	5.910650105	143.6	0.00	0.01	0.00	0.0	0.0	0.01
0.4	0.10	0.1	6.006839056	170.24	0.00	0.01	0.00	0.0	0.0	0.01
0.7	0.10	0.1	6.084363576	175.55	0.00	0.01	0.00	0.0	0.0	0.01
1.3	0.11	0.1	6.20603231	169.52	0.01	0.02	0.01	0.1	0.0	0.01
0.4	0.14	0.1	6.298756102	162.68	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.14	0.2	6.341128285	145.67	0.01	0.02	0.01	0.1	0.0	0.02
5.5	0.15	0.2	6.477433739	125.51	0.01	0.03	0.01	0.1	0.0	0.02
2.0	0.24	0.3	6.594304412	123.8	0.01	0.03	0.01	0.1	0.0	0.03
1.5	0.27	0.3	6.59153595	126.32	0.01	0.03	0.01	0.1	0.0	0.03
0.8	0.30	0.3	6.581375512	130.37	0.01	0.04	0.01	0.1	0.0	0.03
1.1	0.31	0.3	6.568635911	140	0.01	0.04	0.01	0.1	0.0	0.03
0.2	0.33	0.3	6.55900002	153.14	0.01	0.04	0.01	0.1	0.0	0.03
1.6	0.33	0.4	6.54367755	158.63	0.01	0.05	0.01	0.1	0.0	0.04
8.4	0.36	0.5	6.476768838	162.05	0.02	0.08	0.03	0.2	0.0	0.06
10.0	0.50	0.7	6.479025976	169.7	0.03	0.13	0.05	0.4	0.0	0.08
10.0	0.67	0.8	6.651001912	175.1	0.04	0.19	0.07	0.6	0.0	0.11
10.0	0.83	1.0	6.788730328	173.03	0.05	0.25	0.09	0.8	0.0	0.14
5.0	1.00	1.1	6.76372264	169.16	0.06	0.27	0.10	0.8	0.0	0.15
15.0	1.08	1.3	6.858727312	167.99	0.07	0.35	0.14	1.1	0.1	0.19
68.3	1.33	2.5	7	169.07	0.14	0.59	0.30	1.8	0.2	0.36
45.0	2.47	3.2	7	170.33	0.19	0.66	0.40	2.0	0.4	0.48
23.3	3.22	3.6	7	169.61	0.21	0.69	0.45	2.2	0.5	0.54
23.3	3.61	4.0	7	167.27	0.23	0.73	0.50	2.3	0.6	0.60
60.0	4.00	5.0	7	165.11	0.29	0.81	0.61	2.5	0.8	0.75
24.2	5.00	5.4	7	162.23	0.31	0.84	0.64	2.6	0.8	0.81
35.8	5.40	6.0	7	159.08	0.34	0.88	0.70	2.7	0.9	0.89
17.5	6.00	6.3	7	157.46	0.36	0.90	0.72	2.8	1.0	0.93
6.7	6.29	6.4	7	154.13	0.36	0.90	0.73	2.8	1.0	0.94
5.8	6.40	6.5	7	152.06	0.37	0.91	0.73	2.8	1.0	0.95
10.0	6.50	6.7	7	158.09	0.38	0.92	0.73	2.9	1.0	0.98
20.0	6.67	7.0	7	162.32	0.40	0.94	0.74	2.9	1.0	1.02
42780.0	7.00	720.0	7	135.617	1.72	15.88	3.47	33.8	0.0	4.44

6", Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.8	0.08	0.1	5.910650105	143.6	0.00	0.01	0.00	0.0	0.0	0.01
0.4	0.10	0.1	6.006839056	170.24	0.00	0.01	0.00	0.0	0.0	0.01
0.7	0.10	0.1	6.084363576	175.55	0.00	0.01	0.00	0.0	0.0	0.01
1.3	0.11	0.1	6.20603231	169.52	0.01	0.02	0.01	0.1	0.0	0.01
0.4	0.14	0.1	6.298756102	162.68	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.14	0.2	6.341128285	145.67	0.01	0.02	0.01	0.1	0.0	0.02
5.5	0.15	0.2	6.477433739	125.51	0.01	0.03	0.01	0.1	0.0	0.02
2.0	0.24	0.3	6.594304412	123.8	0.01	0.03	0.01	0.1	0.0	0.03
1.5	0.27	0.3	6.59153595	126.32	0.01	0.03	0.01	0.1	0.0	0.03
0.8	0.30	0.3	6.581375512	130.37	0.01	0.04	0.01	0.1	0.0	0.03
1.1	0.31	0.3	6.568635911	140	0.01	0.04	0.01	0.1	0.0	0.03
0.2	0.33	0.3	6.55900002	153.14	0.01	0.04	0.01	0.1	0.0	0.03
1.6	0.33	0.4	6.54367755	158.63	0.01	0.05	0.01	0.1	0.0	0.04
8.4	0.36	0.5	6.476768838	162.05	0.02	0.08	0.03	0.2	0.0	0.06
10.0	0.50	0.7	6.479025976	169.7	0.03	0.13	0.05	0.4	0.0	0.08
10.0	0.67	0.8	6.651001912	175.1	0.04	0.19	0.07	0.6	0.0	0.11
10.0	0.83	1.0	6.788730328	173.03	0.05	0.25	0.09	0.8	0.0	0.14
5.0	1.00	1.1	6.76372264	169.16	0.06	0.27	0.10	0.8	0.0	0.15
15.0	1.08	1.3	6.858727312	167.99	0.07	0.35	0.14	1.1	0.1	0.19
68.3	1.33	2.5	7	169.07	0.14	0.59	0.30	1.8	0.2	0.36
45.0	2.47	3.2	7	170.33	0.19	0.66	0.40	2.0	0.4	0.48
23.3	3.22	3.6	7	169.61	0.21	0.69	0.45	2.2	0.5	0.54
23.3	3.61	4.0	7	167.27	0.23	0.73	0.50	2.3	0.6	0.60
60.0	4.00	5.0	7	165.11	0.29	0.81	0.61	2.5	0.8	0.75
24.2	5.00	5.4	7	162.23	0.31	0.84	0.64	2.6	0.8	0.81
35.8	5.40	6.0	7	159.08	0.34	0.88	0.70	2.7	0.9	0.89
17.5	6.00	6.3	7	157.46	0.36	0.90	0.72	2.8	1.0	0.93
6.7	6.29	6.4	7	154.13	0.37	0.90	0.73	2.8	1.0	0.94
5.8	6.40	6.5	7	152.06	0.37	0.91	0.73	2.8	1.0	0.96
10.0	6.50	6.7	7	158.09	0.38	0.92	0.75	2.9	1.0	0.98
20.0	6.67	7.0	7	162.32	0.40	0.95	0.75	2.9	1.0	1.03
42780.0	7.00	720.0	7	135.617	1.72	15.88	3.49	33.9	0.0	4.44

6", Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.307924699	143.6	0.00	0.01	0.00	0.0	0.0	0.00
0.4	0.10	0.1	6.423026841	170.24	0.00	0.01	0.00	0.0	0.0	0.00
0.7	0.10	0.1	6.515271765	175.55	0.00	0.01	0.00	0.0	0.0	0.00
1.3	0.11	0.1	6.659020219	169.52	0.00	0.02	0.01	0.0	0.0	0.00
0.4	0.14	0.1	6.767915609	162.68	0.00	0.02	0.01	0.1	0.0	0.00
0.5	0.14	0.2	6.817112492	145.67	0.00	0.02	0.01	0.1	0.0	0.01
5.5	0.15	0.2	6.965368321	125.51	0.00	0.03	0.01	0.1	0.0	0.01
2.0	0.24	0.3	7.085314417	123.8	0.00	0.03	0.01	0.1	0.0	0.01
1.5	0.27	0.3	7.071713631	126.32	0.00	0.04	0.01	0.1	0.0	0.01
0.8	0.30	0.3	7.052871811	130.37	0.00	0.04	0.01	0.1	0.0	0.01
1.1	0.31	0.3	7.03225364	140	0.00	0.04	0.01	0.1	0.0	0.01
0.2	0.33	0.3	7.017097729	153.14	0.00	0.04	0.01	0.1	0.0	0.01
1.6	0.33	0.4	6.994058005	158.63	0.00	0.05	0.02	0.1	0.0	0.01
8.4	0.36	0.5	6.896203861	162.05	0.01	0.08	0.03	0.2	0.0	0.02
10.0	0.50	0.7	6.888575232	169.7	0.01	0.13	0.06	0.4	0.0	0.03
10.0	0.67	0.8	7.112459904	175.1	0.01	0.18	0.09	0.6	0.1	0.03
10.0	0.83	1.0	7.304359296	173.03	0.02	0.24	0.11	0.8	0.1	0.04
5.0	1.00	1.1	7.2904359	169.16	0.02	0.27	0.13	0.8	0.1	0.05
15.0	1.08	1.3	7.269376604	167.99	0.02	0.35	0.17	1.1	0.1	0.06
68.3	1.33	2.5	7.3	169.07	0.04	0.46	0.35	1.4	0.4	0.12
45.0	2.47	3.2	7.3	170.33	0.06	0.49	0.47	1.5	0.7	0.15
23.3	3.22	3.6	7.3	169.61	0.07	0.50	0.53	1.6	0.8	0.17
23.3	3.61	4.0	7.3	167.27	0.07	0.51	0.58	1.6	0.9	0.19
60.0	4.00	5.0	7.3	165.11	0.09	0.54	0.70	1.7	1.2	0.24
24.2	5.00	5.4	7.3	162.23	0.10	0.55	0.75	1.7	1.3	0.26
35.8	5.40	6.0	7.3	159.08	0.11	0.57	0.81	1.8	1.4	0.28
17.5	6.00	6.3	7.3	157.46	0.11	0.57	0.84	1.8	1.4	0.30
6.7	6.29	6.4	7.3	154.13	0.12	0.57	0.84	1.8	1.5	0.30
5.8	6.40	6.5	7.3	152.06	0.12	0.58	0.85	1.8	1.5	0.30
10.0	6.50	6.7	7.3	158.09	0.12	0.58	0.85	1.8	1.5	0.31
20.0	6.67	7.0	7.3	162.32	0.13	0.59	0.86	1.8	1.5	0.33
42780.0	7.00	720.0	7.3	135.617	0.55	5.21	3.86	16.2	4.9	1.41

6", Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.8	0.08	0.1	6.307924699	143.6	0.00	0.01	0.00	0.0	0.0	0.00
0.4	0.10	0.1	6.423026841	170.24	0.00	0.01	0.00	0.0	0.0	0.00
0.7	0.10	0.1	6.515271765	175.55	0.00	0.01	0.00	0.0	0.0	0.00
1.3	0.11	0.1	6.659020219	169.52	0.00	0.02	0.01	0.0	0.0	0.00
0.4	0.14	0.1	6.767915609	162.68	0.00	0.02	0.01	0.1	0.0	0.00
0.5	0.14	0.2	6.817112492	145.67	0.00	0.02	0.01	0.1	0.0	0.01
5.5	0.15	0.2	6.965368321	125.51	0.00	0.03	0.01	0.1	0.0	0.01
2.0	0.24	0.3	7.085314417	123.8	0.00	0.03	0.01	0.1	0.0	0.01
1.5	0.27	0.3	7.071713631	126.32	0.00	0.04	0.01	0.1	0.0	0.01
0.8	0.30	0.3	7.052871811	130.37	0.00	0.04	0.01	0.1	0.0	0.01
1.1	0.31	0.3	7.03225364	140	0.00	0.04	0.01	0.1	0.0	0.01
0.2	0.33	0.3	7.017097729	153.14	0.00	0.04	0.01	0.1	0.0	0.01
1.6	0.33	0.4	6.994058005	158.63	0.00	0.05	0.02	0.1	0.0	0.01
8.4	0.36	0.5	6.896203861	162.05	0.01	0.08	0.03	0.2	0.0	0.02
10.0	0.50	0.7	6.888575232	169.7	0.01	0.13	0.06	0.4	0.0	0.03
10.0	0.67	0.8	7.112459904	175.1	0.01	0.18	0.09	0.6	0.1	0.03
10.0	0.83	1.0	7.304359296	173.03	0.02	0.24	0.11	0.8	0.1	0.04
5.0	1.00	1.1	7.2904359	169.16	0.02	0.27	0.13	0.8	0.1	0.05
15.0	1.08	1.3	7.269376604	167.99	0.02	0.35	0.17	1.1	0.1	0.06
68.3	1.33	2.5	7.3	169.07	0.04	0.46	0.35	1.4	0.4	0.12
45.0	2.47	3.2	7.3	170.33	0.06	0.49	0.47	1.5	0.7	0.15
23.3	3.22	3.6	7.3	169.61	0.07	0.50	0.53	1.6	0.8	0.17
23.3	3.61	4.0	7.3	167.27	0.07	0.51	0.58	1.6	0.9	0.19
60.0	4.00	5.0	7.3	165.11	0.09	0.54	0.70	1.7	1.2	0.24
24.2	5.00	5.4	7.3	162.23	0.10	0.55	0.75	1.7	1.3	0.26
35.8	5.40	6.0	7.3	159.08	0.11	0.57	0.81	1.8	1.4	0.28
17.5	6.00	6.3	7.3	157.46	0.11	0.57	0.84	1.8	1.4	0.30
6.7	6.29	6.4	7.3	154.13	0.12	0.57	0.84	1.8	1.5	0.30
5.8	6.40	6.5	7.3	152.06	0.12	0.58	0.85	1.8	1.5	0.30
10.0	6.50	6.7	7.3	158.09	0.12	0.58	0.87	1.8	1.5	0.31
20.0	6.67	7.0	7.3	162.32	0.13	0.59	0.88	1.8	1.5	0.33
42780.0	7.00	720.0	7.3	135.617	0.55	5.21	3.88	16.2	4.9	1.41

6", Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.8	0.08	0.1	6.307924699	143.6	0.00	0.01	0.00	0.0	0.0	0.01
0.4	0.10	0.1	6.423026841	170.24	0.00	0.01	0.00	0.0	0.0	0.01
0.7	0.10	0.1	6.515271765	175.55	0.00	0.01	0.00	0.0	0.0	0.01
1.3	0.11	0.1	6.659020219	169.52	0.01	0.02	0.01	0.1	0.0	0.01
0.4	0.14	0.1	6.767915609	162.68	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.14	0.2	6.817112492	145.67	0.01	0.02	0.01	0.1	0.0	0.02
5.5	0.15	0.2	6.965368321	125.51	0.01	0.03	0.01	0.1	0.0	0.03
2.0	0.24	0.3	7.085314417	123.8	0.01	0.04	0.01	0.1	0.0	0.03
1.5	0.27	0.3	7.071713631	126.32	0.01	0.04	0.01	0.1	0.0	0.03
0.8	0.30	0.3	7.052871811	130.37	0.01	0.04	0.01	0.1	0.0	0.03
1.1	0.31	0.3	7.03225364	140	0.01	0.05	0.01	0.1	0.0	0.03
0.2	0.33	0.3	7.017097729	153.14	0.01	0.05	0.01	0.1	0.0	0.03
1.6	0.33	0.4	6.994058005	158.63	0.01	0.05	0.02	0.2	0.0	0.04
8.4	0.36	0.5	6.896203861	162.05	0.02	0.10	0.03	0.3	0.0	0.06
10.0	0.50	0.7	6.888575232	169.7	0.03	0.15	0.06	0.5	0.0	0.08
10.0	0.67	0.8	7.112459904	175.1	0.04	0.22	0.09	0.7	0.0	0.11
10.0	0.83	1.0	7.304359296	173.03	0.05	0.30	0.12	0.9	0.0	0.14
5.0	1.00	1.1	7.2904359	169.16	0.06	0.33	0.13	1.0	0.1	0.15
15.0	1.08	1.3	7.269376604	167.99	0.07	0.42	0.17	1.3	0.1	0.19
68.3	1.33	2.5	7.3	169.07	0.14	0.62	0.35	1.9	0.3	0.37
45.0	2.47	3.2	7.3	170.33	0.19	0.70	0.48	2.2	0.6	0.49
23.3	3.22	3.6	7.3	169.61	0.21	0.73	0.53	2.3	0.7	0.55
23.3	3.61	4.0	7.3	167.27	0.24	0.77	0.59	2.4	0.8	0.61
60.0	4.00	5.0	7.3	165.11	0.30	0.86	0.71	2.7	1.0	0.76
24.2	5.00	5.4	7.3	162.23	0.32	0.90	0.76	2.8	1.0	0.82
35.8	5.40	6.0	7.3	159.08	0.35	0.94	0.82	2.9	1.1	0.91
17.5	6.00	6.3	7.3	157.46	0.37	0.96	0.84	3.0	1.2	0.95
6.7	6.29	6.4	7.3	154.13	0.37	0.97	0.85	3.0	1.2	0.96
5.8	6.40	6.5	7.3	152.06	0.38	0.98	0.86	3.0	1.2	0.97
10.0	6.50	6.7	7.3	158.09	0.39	0.99	0.86	3.1	1.2	1.00
20.0	6.67	7.0	7.3	162.32	0.40	1.02	0.87	3.2	1.2	1.04
42780.0	7.00	720.0	7.3	135.617	1.72	15.88	4.08	39.6	0.0	4.44

6", Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.8	0.08	0.1	6.307924699	143.6	0.00	0.01	0.00	0.0	0.0	0.01
0.4	0.10	0.1	6.423026841	170.24	0.00	0.01	0.00	0.0	0.0	0.01
0.7	0.10	0.1	6.515271765	175.55	0.00	0.01	0.00	0.0	0.0	0.01
1.3	0.11	0.1	6.659020219	169.52	0.01	0.02	0.01	0.1	0.0	0.01
0.4	0.14	0.1	6.767915609	162.68	0.01	0.02	0.01	0.1	0.0	0.02
0.5	0.14	0.2	6.817112492	145.67	0.01	0.02	0.01	0.1	0.0	0.02
5.5	0.15	0.2	6.965368321	125.51	0.01	0.03	0.01	0.1	0.0	0.03
2.0	0.24	0.3	7.085314417	123.8	0.01	0.04	0.01	0.1	0.0	0.03
1.5	0.27	0.3	7.071713631	126.32	0.01	0.04	0.01	0.1	0.0	0.03
0.8	0.30	0.3	7.052871811	130.37	0.01	0.04	0.01	0.1	0.0	0.03
1.1	0.31	0.3	7.03225364	140	0.01	0.05	0.01	0.1	0.0	0.03
0.2	0.33	0.3	7.017097729	153.14	0.01	0.05	0.01	0.1	0.0	0.03
1.6	0.33	0.4	6.994058005	158.63	0.01	0.05	0.02	0.2	0.0	0.04
8.4	0.36	0.5	6.896203861	162.05	0.02	0.10	0.03	0.3	0.0	0.06
10.0	0.50	0.7	6.888575232	169.7	0.03	0.15	0.06	0.5	0.0	0.08
10.0	0.67	0.8	7.112459904	175.1	0.04	0.22	0.09	0.7	0.0	0.11
10.0	0.83	1.0	7.304359296	173.03	0.05	0.30	0.12	0.9	0.0	0.14
5.0	1.00	1.1	7.2904359	169.16	0.06	0.33	0.13	1.0	0.1	0.15
15.0	1.08	1.3	7.269376604	167.99	0.07	0.42	0.17	1.3	0.1	0.19
68.3	1.33	2.5	7.3	169.07	0.14	0.62	0.35	1.9	0.3	0.37
45.0	2.47	3.2	7.3	170.33	0.19	0.70	0.48	2.2	0.6	0.49
23.3	3.22	3.6	7.3	169.61	0.21	0.73	0.53	2.3	0.7	0.55
23.3	3.61	4.0	7.3	167.27	0.24	0.77	0.59	2.4	0.8	0.61
60.0	4.00	5.0	7.3	165.11	0.30	0.86	0.71	2.7	1.0	0.76
24.2	5.00	5.4	7.3	162.23	0.32	0.90	0.76	2.8	1.0	0.82
35.8	5.40	6.0	7.3	159.08	0.35	0.94	0.82	2.9	1.1	0.91
17.5	6.00	6.3	7.3	157.46	0.37	0.96	0.84	3.0	1.2	0.95
6.7	6.29	6.4	7.3	154.13	0.37	0.97	0.85	3.0	1.2	0.96
5.8	6.40	6.5	7.3	152.06	0.38	0.98	0.86	3.0	1.2	0.97
10.0	6.50	6.7	7.3	158.09	0.39	0.99	0.88	3.1	1.3	1.00
20.0	6.67	7.0	7.3	162.32	0.41	1.02	0.88	3.2	1.2	1.05
42780.0	7.00	720.0	7.3	135.617	1.72	15.88	4.10	39.8	0.0	4.44

6", Maximum, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.170373503	119.695	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.7	0.08	0.1	5.906579221	142.675	0.00	0.01	0.00	0.0	0.0	0.00
1.5	0.10	0.1	6.074136479	178.06	0.00	0.01	0.00	0.0	0.0	0.00
0.9	0.12	0.1	6.231765155	193.78	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.14	0.2	6.336297882	161.42	0.00	0.02	0.01	0.1	0.0	0.01
2.9	0.16	0.2	6.46793443	124.785	0.00	0.02	0.01	0.1	0.0	0.01
1.4	0.20	0.2	6.563452253	144.815	0.00	0.03	0.01	0.1	0.0	0.01
1.4	0.23	0.3	6.588655421	168.90325	0.00	0.03	0.01	0.1	0.0	0.01
2.6	0.25	0.3	6.592301933	172.63825	0.00	0.05	0.02	0.1	0.0	0.01
14.9	0.30	0.5	6.507332828	176.1635	0.01	0.11	0.06	0.4	0.0	0.02
6.0	0.54	0.6	6.465891925	178.5085	0.01	0.14	0.07	0.4	0.1	0.03
29.7	0.64	1.1	6.569830096	172.885	0.02	0.27	0.14	0.8	0.1	0.05
0.8	1.14	1.2	6.624196597	168.82	0.02	0.28	0.14	0.9	0.1	0.05
10.8	1.15	1.3	6.807053419	168.03685	0.02	0.32	0.16	1.0	0.1	0.06
13.3	1.33	1.6	7	167.37185	0.03	0.39	0.19	1.2	0.1	0.07
71.7	1.56	2.8	7	183.055	0.05	0.48	0.46	1.5	0.7	0.14
100.0	2.75	4.4	7	206.365	0.10	0.60	1.30	1.9	2.4	0.25
125.0	4.42	6.5	7	219.975	0.16	0.81	2.91	2.5	5.9	0.42
34.2	6.50	7.1	7	225.905	0.18	0.87	2.97	2.7	6.0	0.46
360.8	7.07	13.1	7	231.39	0.38	1.64	3.66	5.1	7.0	0.97
780.0	13.08	26.1	7	238.5975	0.53	3.57	5.52	11.1	9.7	1.37
1050.0	26.08	43.6	7	240.9865	0.53	5.20	8.20	16.2	14.5	1.37
5160.0	43.58	129.6	7	235.8195	0.54	5.20	19.01	16.2	38.5	1.39
2130.0	129.58	165.1	7	230.6485	0.54	5.20	22.79	16.2	46.9	1.40
1350.0	165.08	187.6	7	229.778	0.54	5.20	25.13	16.2	52.1	1.40
3420.0	187.58	244.6	7	228.27	0.55	5.21	30.79	16.2	64.7	1.41
4658.3	244.58	322.2	7	226.0095	0.55	5.21	37.99	16.2	80.6	1.42
3500.0	322.22	380.6	7	224.089	0.56	5.21	43.10	16.2	92.0	1.43
5000.0	380.56	463.9	7	222.4	0.56	5.21	50.02	16.2	107.3	1.45
3333.3	463.89	519.4	7	221.1475	0.56	5.21	54.46	16.2	117.2	1.46
3500.0	519.44	577.8	7	220.2255	0.57	5.21	59.00	16.2	127.3	1.47
3500.0	577.78	636.1	7	219.223	0.57	5.21	63.39	16.2	137.0	1.48
5033.3	636.11	720.0	7	218.459	0.58	5.22	69.57	16.2	150.7	1.49

6", Maximum, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.170373503	119.695	0.0008	0.0038	0.0007	0.007	0.000	0.002
0.7	0.08	0.1	5.906579221	142.675	0.00	0.01	0.00	0.0	0.0	0.00
1.5	0.10	0.1	6.074136479	178.06	0.00	0.01	0.00	0.0	0.0	0.00
0.9	0.12	0.1	6.231765155	193.78	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.14	0.2	6.336297882	161.42	0.00	0.02	0.01	0.1	0.0	0.01
2.9	0.16	0.2	6.46793443	124.785	0.00	0.02	0.01	0.1	0.0	0.01
1.4	0.20	0.2	6.563452253	144.815	0.00	0.03	0.01	0.1	0.0	0.01
1.4	0.23	0.3	6.588655421	168.90325	0.00	0.03	0.01	0.1	0.0	0.01
2.6	0.25	0.3	6.592301933	172.63825	0.00	0.05	0.02	0.1	0.0	0.01
14.9	0.30	0.5	6.507332828	176.1635	0.01	0.11	0.04	0.4	0.0	0.02
6.0	0.54	0.6	6.465891925	178.5085	0.01	0.14	0.06	0.4	0.0	0.03
29.7	0.64	1.1	6.569830096	172.885	0.02	0.27	0.10	0.8	0.0	0.05
0.8	1.14	1.2	6.624196597	168.82	0.02	0.28	0.10	0.9	0.0	0.05
10.8	1.15	1.3	6.807053419	168.03685	0.02	0.32	0.12	1.0	0.0	0.06
13.3	1.33	1.6	7	167.37185	0.03	0.39	0.15	1.2	0.1	0.07
71.7	1.56	2.8	7	183.055	0.05	0.48	0.42	1.5	0.6	0.14
100.0	2.75	4.4	7	206.365	0.10	0.60	1.26	1.9	2.4	0.25
125.0	4.42	6.5	7	219.975	0.16	0.81	2.87	2.5	5.8	0.42
34.2	6.50	7.1	7	225.905	0.18	0.87	2.93	2.7	5.9	0.46
360.8	7.07	13.1	7	231.39	0.38	1.64	3.63	5.1	6.9	0.97
780.0	13.08	26.1	7	238.5975	0.53	3.58	5.49	11.1	9.6	1.37
1050.0	26.08	43.6	7	240.9865	0.53	5.20	8.17	16.2	14.4	1.37
5160.0	43.58	129.6	7	235.8195	0.54	5.20	18.97	16.2	38.4	1.39
2130.0	129.58	165.1	7	230.6485	0.54	5.20	22.76	16.2	46.8	1.40
1350.0	165.08	187.6	7	229.778	0.54	5.20	25.09	16.2	52.0	1.40
3420.0	187.58	244.6	7	228.27	0.55	5.21	30.75	16.2	64.6	1.41
4658.3	244.58	322.2	7	226.0095	0.55	5.21	37.95	16.2	80.6	1.42
3500.0	322.22	380.6	7	224.089	0.56	5.21	43.06	16.2	91.9	1.43
5000.0	380.56	463.9	7	222.4	0.56	5.21	49.98	16.2	107.3	1.45
3333.3	463.89	519.4	7	221.1475	0.56	5.21	54.43	16.2	117.1	1.46
3500.0	519.44	577.8	7	220.2255	0.57	5.21	58.96	16.2	127.2	1.47
3500.0	577.78	636.1	7	219.223	0.57	5.21	63.36	16.2	136.9	1.48
5033.3	636.11	720.0	7	218.459	0.58	5.22	69.53	16.2	150.7	1.49

6", Maximum, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.170373503	119.695	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.7	0.08	0.1	5.906579221	142.675	0.00	0.01	0.00	0.0	0.0	0.01
1.5	0.10	0.1	6.074136479	178.06	0.00	0.01	0.00	0.0	0.0	0.01
0.9	0.12	0.1	6.231765155	193.78	0.01	0.02	0.01	0.1	0.0	0.02
1.2	0.14	0.2	6.336297882	161.42	0.01	0.02	0.01	0.1	0.0	0.02
2.9	0.16	0.2	6.46793443	124.785	0.01	0.03	0.01	0.1	0.0	0.02
1.4	0.20	0.2	6.563452253	144.815	0.01	0.03	0.01	0.1	0.0	0.03
1.4	0.23	0.3	6.588655421	168.90325	0.01	0.04	0.01	0.1	0.0	0.03
2.6	0.25	0.3	6.592301933	172.63825	0.01	0.05	0.02	0.2	0.0	0.04
14.9	0.30	0.5	6.507332828	176.1635	0.03	0.14	0.06	0.4	0.0	0.08
6.0	0.54	0.6	6.465891925	178.5085	0.04	0.17	0.07	0.5	0.0	0.09
29.7	0.64	1.1	6.569830096	172.885	0.07	0.33	0.14	1.0	0.1	0.17
0.8	1.14	1.2	6.624196597	168.82	0.07	0.34	0.14	1.1	0.1	0.17
10.8	1.15	1.3	6.807053419	168.03685	0.08	0.40	0.16	1.2	0.1	0.20
13.3	1.33	1.6	7	167.37185	0.09	0.47	0.19	1.5	0.1	0.23
71.7	1.56	2.8	7	183.055	0.17	0.67	0.46	2.1	0.5	0.45
100.0	2.75	4.4	7	206.365	0.32	1.06	1.31	3.3	2.2	0.81
125.0	4.42	6.5	7	219.975	0.51	1.72	2.95	5.3	5.3	1.33
34.2	6.50	7.1	7	225.905	0.57	1.92	3.01	6.0	5.3	1.47
360.8	7.07	13.1	7	231.39	1.20	4.38	3.79	13.6	5.3	3.09
780.0	13.08	26.1	7	238.5975	1.71	10.53	5.89	32.8	5.6	4.40
1050.0	26.08	43.6	7	240.9865	1.71	15.87	8.88	49.4	8.4	4.41
5160.0	43.58	129.6	7	235.8195	1.71	15.88	20.07	49.4	33.3	4.42
2130.0	129.58	165.1	7	230.6485	1.72	15.88	23.86	49.4	41.7	4.43
1350.0	165.08	187.6	7	229.778	1.72	15.88	26.19	49.4	46.9	4.43
3420.0	187.58	244.6	7	228.27	1.72	15.88	31.85	49.4	59.4	4.44
4658.3	244.58	322.2	7	226.0095	1.73	15.88	39.05	49.4	75.4	4.46
3500.0	322.22	380.6	7	224.089	1.73	15.88	44.16	49.4	86.7	4.47
5000.0	380.56	463.9	7	222.4	1.74	15.88	51.08	49.4	102.1	4.48
3333.3	463.89	519.4	7	221.1475	1.74	15.89	55.53	49.4	112.0	4.49
3500.0	519.44	577.8	7	220.2255	1.74	15.89	60.06	49.4	122.0	4.50
3500.0	577.78	636.1	7	219.223	1.75	15.89	64.46	49.4	131.8	4.51
5033.3	636.11	720.0	7	218.459	1.75	15.89	70.63	49.4	145.5	4.52

6", Maximum, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.170373503	119.695	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.7	0.08	0.1	5.906579221	142.675	0.00	0.01	0.00	0.0	0.0	0.01
1.5	0.10	0.1	6.074136479	178.06	0.00	0.01	0.00	0.0	0.0	0.01
0.9	0.12	0.1	6.231765155	193.78	0.01	0.02	0.01	0.1	0.0	0.02
1.2	0.14	0.2	6.336297882	161.42	0.01	0.02	0.01	0.1	0.0	0.02
2.9	0.16	0.2	6.46793443	124.785	0.01	0.03	0.01	0.1	0.0	0.02
1.4	0.20	0.2	6.563452253	144.815	0.01	0.03	0.01	0.1	0.0	0.03
1.4	0.23	0.3	6.588655421	168.90325	0.01	0.04	0.01	0.1	0.0	0.03
2.6	0.25	0.3	6.592301933	172.63825	0.01	0.05	0.02	0.2	0.0	0.04
14.9	0.30	0.5	6.507332828	176.1635	0.03	0.14	0.06	0.4	0.0	0.08
6.0	0.54	0.6	6.465891925	178.5085	0.04	0.17	0.07	0.5	0.0	0.09
29.7	0.64	1.1	6.569830096	172.885	0.07	0.33	0.14	1.0	0.1	0.17
0.8	1.14	1.2	6.624196597	168.82	0.07	0.34	0.14	1.1	0.1	0.17
10.8	1.15	1.3	6.807053419	168.03685	0.08	0.40	0.16	1.2	0.1	0.20
13.3	1.33	1.6	7	167.37185	0.09	0.47	0.19	1.5	0.1	0.23
71.7	1.56	2.8	7	183.055	0.17	0.67	0.46	2.1	0.5	0.45
100.0	2.75	4.4	7	206.365	0.32	1.06	1.31	3.3	2.2	0.81
125.0	4.42	6.5	7	219.975	0.52	1.72	2.95	5.3	5.3	1.33
34.2	6.50	7.1	7	225.905	0.57	1.93	3.01	6.0	5.3	1.48
360.8	7.07	13.1	7	231.39	1.20	4.39	3.79	13.6	5.3	3.10
780.0	13.08	26.1	7	238.5975	1.71	10.56	5.90	32.8	5.6	4.40
1050.0	26.08	43.6	7	240.9865	1.71	15.87	8.90	49.4	8.5	4.41
5160.0	43.58	129.6	7	235.8195	1.71	15.88	20.07	49.4	33.3	4.42
2130.0	129.58	165.1	7	230.6485	1.72	15.88	23.86	49.4	41.7	4.43
1350.0	165.08	187.6	7	229.778	1.72	15.88	26.19	49.4	46.9	4.43
3420.0	187.58	244.6	7	228.27	1.72	15.88	31.85	49.4	59.4	4.44
4658.3	244.58	322.2	7	226.0095	1.73	15.88	39.05	49.4	75.4	4.46
3500.0	322.22	380.6	7	224.089	1.73	15.88	44.16	49.4	86.7	4.47
5000.0	380.56	463.9	7	222.4	1.74	15.88	51.08	49.4	102.1	4.48
3333.3	463.89	519.4	7	221.1475	1.74	15.89	55.53	49.4	112.0	4.49
3500.0	519.44	577.8	7	220.2255	1.74	15.89	60.06	49.4	122.0	4.50
3500.0	577.78	636.1	7	219.223	1.75	15.89	64.46	49.4	131.8	4.51
5033.3	636.11	720.0	7	218.459	1.75	15.89	70.63	49.4	145.5	4.52

6", Maximum, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.40858715	119.695	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.7	0.08	0.1	6.303068928	142.675	0.00	0.01	0.00	0.0	0.0	0.00
1.5	0.10	0.1	6.502800672	178.06	0.00	0.01	0.01	0.0	0.0	0.00
0.9	0.12	0.1	6.689411197	193.78	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.14	0.2	6.811280287	161.42	0.00	0.02	0.01	0.1	0.0	0.01
2.9	0.16	0.2	6.959741467	124.785	0.00	0.03	0.01	0.1	0.0	0.01
1.4	0.20	0.2	7.063034215	144.815	0.00	0.03	0.01	0.1	0.0	0.01
1.4	0.23	0.3	7.084940407	168.90325	0.00	0.04	0.02	0.1	0.0	0.01
2.6	0.25	0.3	7.077281784	172.63825	0.00	0.05	0.02	0.2	0.0	0.01
14.9	0.30	0.5	6.9424594	176.1635	0.01	0.14	0.07	0.4	0.1	0.02
6.0	0.54	0.6	6.870382579	178.5085	0.01	0.17	0.09	0.5	0.1	0.03
29.7	0.64	1.1	7.032328482	172.885	0.02	0.33	0.16	1.0	0.1	0.05
0.8	1.14	1.2	7.132850063	168.82	0.02	0.33	0.16	1.0	0.1	0.06
10.8	1.15	1.3	7.210766867	168.03685	0.02	0.39	0.19	1.2	0.1	0.06
13.3	1.33	1.6	7.3	167.37185	0.03	0.44	0.22	1.4	0.2	0.07
71.7	1.56	2.8	7.3	183.055	0.06	0.49	0.54	1.5	0.8	0.14
100.0	2.75	4.4	7.3	206.365	0.10	0.63	1.49	2.0	2.9	0.26
125.0	4.42	6.5	7.3	219.975	0.16	0.86	3.33	2.7	6.8	0.42
34.2	6.50	7.1	7.3	225.905	0.18	0.93	3.39	2.9	6.9	0.47
360.8	7.07	13.1	7.3	231.39	0.38	1.79	4.18	5.6	8.0	0.99
780.0	13.08	26.1	7.3	238.5975	0.53	3.95	6.27	12.3	11.1	1.37
1050.0	26.08	43.6	7.3	240.9865	0.53	5.20	9.28	16.2	16.9	1.37
5160.0	43.58	129.6	7.3	235.8195	0.54	5.20	21.40	16.2	43.8	1.39
2130.0	129.58	165.1	7.3	230.6485	0.54	5.20	25.68	16.2	53.3	1.39
1350.0	165.08	187.6	7.3	229.778	0.54	5.20	28.32	16.2	59.2	1.40
3420.0	187.58	244.6	7.3	228.27	0.55	5.21	34.72	16.2	73.4	1.41
4658.3	244.58	322.2	7.3	226.0095	0.55	5.21	42.87	16.2	91.5	1.42
3500.0	322.22	380.6	7.3	224.089	0.55	5.21	48.65	16.2	104.3	1.43
5000.0	380.56	463.9	7.3	222.4	0.56	5.21	56.50	16.2	121.7	1.44
3333.3	463.89	519.4	7.3	221.1475	0.56	5.21	61.54	16.2	132.9	1.45
3500.0	519.44	577.8	7.3	220.2255	0.57	5.21	66.69	16.2	144.4	1.46
3500.0	577.78	636.1	7.3	219.223	0.57	5.21	71.68	16.2	155.4	1.47
5033.3	636.11	720.0	7.3	218.459	0.57	5.22	78.70	16.2	171.0	1.48

6", Maximum, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.40858715	119.695	0.0008	0.0042	0.0008	0.007	0.000	0.002
0.7	0.08	0.1	6.303068928	142.675	0.00	0.01	0.00	0.0	0.0	0.00
1.5	0.10	0.1	6.502800672	178.06	0.00	0.01	0.01	0.0	0.0	0.00
0.9	0.12	0.1	6.689411197	193.78	0.00	0.02	0.01	0.1	0.0	0.00
1.2	0.14	0.2	6.811280287	161.42	0.00	0.02	0.01	0.1	0.0	0.01
2.9	0.16	0.2	6.959741467	124.785	0.00	0.03	0.01	0.1	0.0	0.01
1.4	0.20	0.2	7.063034215	144.815	0.00	0.03	0.01	0.1	0.0	0.01
1.4	0.23	0.3	7.084940407	168.90325	0.00	0.04	0.02	0.1	0.0	0.01
2.6	0.25	0.3	7.077281784	172.63825	0.00	0.05	0.02	0.2	0.0	0.01
14.9	0.30	0.5	6.9424594	176.1635	0.01	0.14	0.07	0.4	0.1	0.02
6.0	0.54	0.6	6.870382579	178.5085	0.01	0.17	0.09	0.5	0.1	0.03
29.7	0.64	1.1	7.032328482	172.885	0.02	0.33	0.16	1.0	0.1	0.05
0.8	1.14	1.2	7.132850063	168.82	0.02	0.33	0.16	1.0	0.1	0.06
10.8	1.15	1.3	7.210766867	168.03685	0.02	0.39	0.19	1.2	0.1	0.06
13.3	1.33	1.6	7.3	167.37185	0.03	0.44	0.22	1.4	0.2	0.07
71.7	1.56	2.8	7.3	183.055	0.06	0.49	0.54	1.5	0.8	0.14
100.0	2.75	4.4	7.3	206.365	0.10	0.63	1.49	2.0	2.9	0.26
125.0	4.42	6.5	7.3	219.975	0.16	0.86	3.33	2.7	6.8	0.42
34.2	6.50	7.1	7.3	225.905	0.18	0.93	3.39	2.9	6.9	0.47
360.8	7.07	13.1	7.3	231.39	0.38	1.79	4.18	5.6	8.0	0.99
780.0	13.08	26.1	7.3	238.5975	0.53	3.95	6.27	12.3	11.1	1.37
1050.0	26.08	43.6	7.3	240.9865	0.53	5.20	9.28	16.2	16.9	1.37
5160.0	43.58	129.6	7.3	235.8195	0.54	5.20	21.40	16.2	43.8	1.39
2130.0	129.58	165.1	7.3	230.6485	0.54	5.20	25.68	16.2	53.3	1.39
1350.0	165.08	187.6	7.3	229.778	0.54	5.20	28.32	16.2	59.2	1.40
3420.0	187.58	244.6	7.3	228.27	0.55	5.21	34.72	16.2	73.4	1.41
4658.3	244.58	322.2	7.3	226.0095	0.55	5.21	42.87	16.2	91.5	1.42
3500.0	322.22	380.6	7.3	224.089	0.55	5.21	48.65	16.2	104.3	1.43
5000.0	380.56	463.9	7.3	222.4	0.56	5.21	56.50	16.2	121.7	1.44
3333.3	463.89	519.4	7.3	221.1475	0.56	5.21	61.54	16.2	132.9	1.45
3500.0	519.44	577.8	7.3	220.2255	0.57	5.21	66.69	16.2	144.4	1.46
3500.0	577.78	636.1	7.3	219.223	0.57	5.21	71.68	16.2	155.4	1.47
5033.3	636.11	720.0	7.3	218.459	0.57	5.22	78.70	16.2	171.0	1.48

6", Maximum, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.40858715	119.695	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.7	0.08	0.1	6.303068928	142.675	0.00	0.01	0.00	0.0	0.0	0.01
1.5	0.10	0.1	6.502800672	178.06	0.00	0.02	0.01	0.0	0.0	0.01
0.9	0.12	0.1	6.689411197	193.78	0.01	0.02	0.01	0.1	0.0	0.02
1.2	0.14	0.2	6.811280287	161.42	0.01	0.03	0.01	0.1	0.0	0.02
2.9	0.16	0.2	6.959741467	124.785	0.01	0.04	0.01	0.1	0.0	0.02
1.4	0.20	0.2	7.063034215	144.815	0.01	0.04	0.01	0.1	0.0	0.03
1.4	0.23	0.3	7.084940407	168.90325	0.01	0.05	0.02	0.2	0.0	0.03
2.6	0.25	0.3	7.077281784	172.63825	0.01	0.07	0.02	0.2	0.0	0.04
14.9	0.30	0.5	6.9424594	176.1635	0.03	0.17	0.07	0.5	0.0	0.08
6.0	0.54	0.6	6.870382579	178.5085	0.04	0.21	0.09	0.6	0.0	0.09
29.7	0.64	1.1	7.032328482	172.885	0.07	0.40	0.16	1.2	0.1	0.17
0.8	1.14	1.2	7.132850063	168.82	0.07	0.40	0.17	1.3	0.1	0.18
10.8	1.15	1.3	7.210766867	168.03685	0.08	0.47	0.19	1.5	0.1	0.21
13.3	1.33	1.6	7.3	167.37185	0.09	0.54	0.22	1.7	0.1	0.24
71.7	1.56	2.8	7.3	183.055	0.18	0.71	0.54	2.2	0.7	0.46
100.0	2.75	4.4	7.3	206.365	0.32	1.14	1.51	3.6	2.5	0.83
125.0	4.42	6.5	7.3	219.975	0.52	1.88	3.37	5.9	6.1	1.35
34.2	6.50	7.1	7.3	225.905	0.58	2.11	3.44	6.6	6.1	1.50
360.8	7.07	13.1	7.3	231.39	1.22	4.86	4.32	15.1	6.1	3.15
780.0	13.08	26.1	7.3	238.5975	1.71	11.74	6.69	36.5	6.5	4.40
1050.0	26.08	43.6	7.3	240.9865	1.71	15.87	10.05	49.4	11.0	4.41
5160.0	43.58	129.6	7.3	235.8195	1.71	15.88	22.46	49.4	38.6	4.42
2130.0	129.58	165.1	7.3	230.6485	1.72	15.88	26.74	49.4	48.1	4.43
1350.0	165.08	187.6	7.3	229.778	1.72	15.88	29.38	49.4	53.9	4.43
3420.0	187.58	244.6	7.3	228.27	1.72	15.88	35.78	49.4	68.1	4.44
4658.3	244.58	322.2	7.3	226.0095	1.73	15.88	43.93	49.4	86.2	4.45
3500.0	322.22	380.6	7.3	224.089	1.73	15.88	49.71	49.4	99.1	4.46
5000.0	380.56	463.9	7.3	222.4	1.74	15.88	57.57	49.4	116.5	4.48
3333.3	463.89	519.4	7.3	221.1475	1.74	15.89	62.61	49.4	127.7	4.49
3500.0	519.44	577.8	7.3	220.2255	1.74	15.89	67.75	49.4	139.1	4.49
3500.0	577.78	636.1	7.3	219.223	1.75	15.89	72.74	49.4	150.2	4.50
5033.3	636.11	720.0	7.3	218.459	1.75	15.89	79.76	49.4	165.8	4.52

6", Maximum, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.40858715	119.695	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.7	0.08	0.1	6.303068928	142.675	0.00	0.01	0.00	0.0	0.0	0.01
1.5	0.10	0.1	6.502800672	178.06	0.00	0.02	0.01	0.0	0.0	0.01
0.9	0.12	0.1	6.689411197	193.78	0.01	0.02	0.01	0.1	0.0	0.02
1.2	0.14	0.2	6.811280287	161.42	0.01	0.03	0.01	0.1	0.0	0.02
2.9	0.16	0.2	6.959741467	124.785	0.01	0.04	0.01	0.1	0.0	0.02
1.4	0.20	0.2	7.063034215	144.815	0.01	0.04	0.01	0.1	0.0	0.03
1.4	0.23	0.3	7.084940407	168.90325	0.01	0.05	0.02	0.2	0.0	0.03
2.6	0.25	0.3	7.077281784	172.63825	0.01	0.07	0.02	0.2	0.0	0.04
14.9	0.30	0.5	6.9424594	176.1635	0.03	0.17	0.07	0.5	0.0	0.08
6.0	0.54	0.6	6.870382579	178.5085	0.04	0.21	0.09	0.6	0.0	0.09
29.7	0.64	1.1	7.032328482	172.885	0.07	0.40	0.16	1.2	0.1	0.18
0.8	1.14	1.2	7.132850063	168.82	0.07	0.40	0.17	1.3	0.1	0.18
10.8	1.15	1.3	7.210766867	168.03685	0.08	0.47	0.19	1.5	0.1	0 21
13.3	1.33	1.6	7.3	167.37185	0.09	0.54	0.22	1.7	0.1	0.24
71.7	1.56	2.8	7.3	183.055	0.18	0.71	0.54	2.2	0.7	0.46
100.0	2.75	4.4	7.3	206.365	0.32	1.14	1.51	3.6	2.5	0.83
125.0	4.42	6.5	7.3	219.975	0.53	1.88	3.37	5.9	6.1	1.36
34.2	6.50	7.1	7.3	225.905	0.58	2.11	3.44	6.6	6.1	1.51
360.8	7.07	13.1	7.3	231.39	1.23	4.86	4.32	15.1	6.1	3.16
780.0	13.08	26.1	7.3	238.5975	1.71	11.76	6.69	36.6	6.5	4.40
1050.0	26.08	43.6	7.3	240.9865	1.71	15.87	10.06	49.4	11.1	4.41
5160.0	43.58	129.6	7.3	235.8195	1.71	15.88	22.46	49.4	38.6	4.42
2130.0	129.58	165.1	7.3	230.6485	1.72	15.88	26.74	49.4	48.1	4.43
1350.0	165.08	187.6	7.3	229.778	1.72	15.88	29.38	49.4	53.9	4.43
3420.0	187.58	244.6	7.3	228.27	1.72	15.88	35.78	49.4	68.1	4.44
4658.3	244.58	322.2	7.3	226.0095	1.73	15.88	43.93	49.4	86.2	4.45
3500 0	322.22	380.6	7.3	224.089	1.73	15.88	49.71	49.4	99.1	4.46
5000.0	380.56	463.9	7.3	222.4	1.74	15.88	57.57	49.4	116.5	4.48
3333.3	463.89	519.4	7.3	221.1475	1.74	15.89	62.61	49.4	127.7	4.49
3500.0	519.44	577.8	7.3	220.2255	1.74	15.89	67.75	49.4	139.1	4.49
3500.0	577.78	636.1	7.3	219.223	1.75	15.89	72.74	49.4	150.2	4.50
5033.3	636.11	720.0	7.3	218.459	1.75	15.89	79.76	49.4	165.8	4.52

8", Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.4	0.08	0.1	5.873575099	145.22	0.00	0.01	0.00	0.0	0.0	0.01
0.6	0.09	0.1	5.955796108	179.6	0.00	0.01	0.00	0.0	0.0	0.01
1.4	0.10	0.1	6.101517142	181.31	0.01	0.02	0.01	0.0	0.0	0.01
0.3	0.12	0.1	6.21266814	175.1	0.01	0.02	0.01	0.1	0.0	0.01
0.3	0.13	0.1	6.247506009	152.78	0.01	0.02	0.01	0.1	0.0	0.01
0.2	0.13	0.1	6.276199566	127.85	0.01	0.02	0.01	0.1	0.0	0.01
2.4	0.14	0.2	6.379800574	125.24	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.483736627	144.86	0.01	0.02	0.01	0.1	0.0	0.02
0.2	0.18	0.2	6.498766032	166.01	0.01	0.02	0.01	0.1	0.0	0.02
1.1	0.19	0.2	6.524371794	161.96	0.01	0.03	0.01	0.1	0.0	0.02
0.9	0.20	0.2	6.558047326	156.38	0.01	0.03	0.01	0.1	0.0	0.02
3.2	0.22	0.3	6.583699636	155.75	0.01	0.04	0.01	0.1	0.0	0.03
9.1	0.27	0.4	6.531233873	157.73	0.02	0.08	0.03	0.2	0.0	0.05
0.5	0.42	0.4	6.461711867	166.91	0.02	0.08	0.03	0.3	0.0	0.05
5.6	0.43	0.5	6.440413134	174.83	0.03	0.11	0.04	0.3	0.0	0.07
7.0	0.53	0.6	6.46306885	176.27	0.03	0.15	0.06	0.5	0.0	0.09
3.1	0.64	0.7	6.537410355	176.72	0.04	0.17	0.06	0.5	0.0	0.09
11.8	0.69	0.9	6.693482457	174.29	0.05	0.24	0.09	0.7	0.0	0.13
11.6	0.89	1.1	6.766556376	171.05	0.06	0.30	0.12	0.9	0.0	0.16
15.0	1.08	1.3	6.858727312	169.61	0.08	0.38	0.15	1.2	0.1	0.20
1.7	1.33	1.4	7	169.88	0.08	0.39	0.15	1.2	0.1	0.20
43.3	1.36	2.1	7	169.88	0.12	0.56	0.26	1.8	0.2	0.31
45.0	2.08	2.8	7	167.81	0.17	0.63	0.35	2.0	0.3	0.43
130.0	2.83	5.0	7	163.76	0.29	0.80	0.59	2.5	0.8	0.74
72.5	5.00	6.2	7	154.31	0.35	0.87	0.69	2.7	0.9	0.90
0.0	6.21	6.2	7	143.69	0.35	0.87	0.69	2.7	0.9	0.90
15.0	6.21	6.5	7	140.36	0.36	0.88	0.70	2.7	0.9	0.93
2.5	6.46	6.5	7	147.47	0.36	0.88	0.70	2.7	0.9	0.94
13.3	6.50	6.7	7	157.46	0.37	0.90	0.70	2.8	0.9	0.97
76.7	6.72	8.0	7	155.57	0.44	0.98	0.71	3.0	0.9	1.14
125.0	8.00	10.1	7	145.31	0.54	1.07	0.73	3.3	0.8	1.38
42595.0	10.08	720.0	7	124.9093573	1.72	15.88	2.40	23.4	0.0	4.44

8", Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0026	0.0044	0.0007	0.007	0.000	0.007
0.4	0.08	0.1	5.873575099	145.22	0.00	0.01	0.00	0.0	0.0	0.01
0.6	0.09	0.1	5.955796108	179.6	0.00	0.01	0.00	0.0	0.0	0.01
1.4	0.10	0.1	6.101517142	181.31	0.01	0.02	0.01	0.0	0.0	0.01
0.3	0.12	0.1	6.21266814	175.1	0.01	0.02	0.01	0.1	0.0	0.01
0.3	0.13	0.1	6.247506009	152.78	0.01	0.02	0.01	0.1	0.0	0.01
0.2	0.13	0.1	6.276199566	127.85	0.01	0.02	0.01	0.1	0.0	0.01
2.4	0.14	0.2	6.379800574	125.24	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.483736627	144.86	0.01	0.02	0.01	0.1	0.0	0.02
0.2	0.18	0.2	6.498766032	166.01	0.01	0.02	0.01	0.1	0.0	0.02
1.1	0.19	0.2	6.524371794	161.96	0.01	0.03	0.01	0.1	0.0	0.02
0.9	0.20	0.2	6.558047326	156.38	0.01	0.03	0.01	0.1	0.0	0.02
3.2	0.22	0.3	6.583699636	155.75	0.01	0.04	0.01	0.1	0.0	0.03
9.1	0.27	0.4	6.531233873	157.73	0.02	0.08	0.03	0.2	0.0	0.05
0.5	0.42	0.4	6.461711867	166.91	0.02	0.08	0.03	0.3	0.0	0.05
5.6	0.43	0.5	6.440413134	174.83	0.03	0.11	0.04	0.3	0.0	0.07
7.0	0.53	0.6	6.46306885	176.27	0.03	0.15	0.06	0.5	0.0	0.09
3.1	0.64	0.7	6.537410355	176.72	0.04	0.17	0.06	0.5	0.0	0.10
11.8	0.69	0.9	6.693482457	174.29	0.05	0.24	0.09	0.7	0.0	0.13
11.6	0.89	1.1	6.766556376	171.05	0.06	0.30	0.12	0.9	0.0	0.16
15.0	1.08	1.3	6.858727312	169.61	0.08	0.39	0.15	1.2	0.1	0.20
1.7	1.33	1.4	7	169.88	0.08	0.39	0.15	1.2	0.1	0.20
43.3	1.36	2.1	7	169.88	0.12	0.56	0.26	1.8	0.2	0.31
45.0	2.08	2.8	7	167.81	0.17	0.63	0.35	2.0	0.3	0.43
130.0	2.83	5.0	7	163.76	0.29	0.80	0.59	2.5	0.8	0.74
72.5	5.00	6.2	7	154.31	0.35	0.87	0.69	2.7	0.9	0.90
0.0	6.21	6.2	7	143.69	0.35	0.87	0.69	2.7	0.9	0.90
15.0	6.21	6.5	7	140.36	0.36	0.88	0.70	2.7	0.9	0.93
2.5	6.46	6.5	7	147.47	0.36	0.88	0.70	2.7	0.9	0.94
13.3	6.50	6.7	7	157.46	0.38	0.90	0.70	2.8	0.9	0.97
76.7	6.72	8.0	7	155.57	0.44	0.98	0.71	3.0	0.9	1.14
125.0	8.00	10.1	7	145.31	0.54	1.07	0.73	3.3	0.8	1.38
42595.0	10.08	720.0	7	124.9093573	1.72	15.88	2.40	23.4	0.0	4.44

8", Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0868	0.0332	0.0010	0.009	0.000	0.224
0.4	0.08	0.1	5.873575099	145.22	0.10	0.04	0.00	0.0	0.0	0.25
0.6	0.09	0.1	5.955796108	179.6	0.12	0.07	0.00	0.0	0.0	0.30
1.4	0.10	0.1	6.101517142	181.31	0.17	0.14	0.01	0.1	0.0	0.43
0.3	0.12	0.1	6.21266814	175.1	0.18	0.16	0.01	0.1	0.0	0.45
0.3	0.13	0.1	6.247506009	152.78	0.18	0.17	0.01	0.1	0.0	0.48
0.2	0.13	0.1	6.276199566	127.85	0.19	0.17	0.01	0.1	0.0	0.49
2.4	0.14	0.2	6.379800574	125.24	0.24	0.20	0.01	0.1	0.0	0.61
0.4	0.18	0.2	6.483736627	144.86	0.25	0.21	0.01	0.1	0.0	0.64
0.2	0.18	0.2	6.498766032	166.01	0.25	0.21	0.01	0.1	0.0	0.65
1.1	0.19	0.2	6.524371794	161.96	0.28	0.26	0.01	0.1	0.0	0.73
0.9	0.20	0.2	6.558047326	156.38	0.31	0.28	0.02	0.1	0.0	0.80
3.2	0.22	0.3	6.583699636	155.75	0.40	0.39	0.02	0.2	0.0	1.02
9.1	0.27	0.4	6.531233873	157.73	0.65	0.69	0.04	0.3	0.0	1.68
0.5	0.42	0.4	6.461711867	166.91	0.67	0.71	0.04	0.4	0.0	1.72
5.6	0.43	0.5	6.440413134	174.83	0.85	0.99	0.05	0.5	0.0	2.19
7.0	0.53	0.6	6.46306885	176.27	1.08	1.36	0.08	0.8	0.0	2.78
3.1	0.64	0.7	6.537410355	176.72	1.18	1.52	0.09	0.9	0.0	3.04
11.8	0.69	0.9	6.693482457	174.29	1.56	2.16	0.13	1.3	0.0	4.01
11.6	0.89	1.1	6.766556376	171.05	1.91	2.75	0.17	1.6	0.0	4.92
15.0	1.08	1.3	6.858727312	169.61	2.35	3.51	0.21	2.1	0.0	6.06
1.7	1.33	1.4	7	169.88	2.40	3.60	0.22	2.1	0.0	6.18
43.3	1.36	2.1	7	169.88	3.65	5.81	0.36	3.5	0.0	9.41
45.0	2.08	2.8	7	167.81	4.81	7.81	0.50	4.8	0.0	12.40
130.0	2.83	5.0	7	163.76	7.72	12.82	0.83	8.0	0.0	19.92
72.5	5.00	6.2	7	154.31	8.78	14.73	0.95	9.2	0.0	22.66
0.0	6.21	6.2	7	143.69	8.78	14.73	0.95	9.2	0.0	22.66
15.0	6.21	6.5	7	140.36	8.93	14.97	0.96	9.3	0.0	23.04
2.5	6.46	6.5	7	147.47	8.96	15.02	0.96	9.4	0.0	23.11
13.3	6.50	6.7	7	157.46	9.13	15.39	0.97	9.4	0.0	23.56
76.7	6.72	8.0	7	155.57	10.08	17.39	1.01	9.8	0.0	26.01
125.0	8.00	10.1	7	145.31	11.16	19.56	1.05	10.2	0.0	28.80
42595.0	10.08	720.0	7	124.9093573	56.39	303.75	4.81	46.8	0.0	145.49

8", Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	119.75	0.0868	0.0332	0.0010	0.009	0.000	0.224
0.4	0.08	0.1	5.873575099	145.22	0.10	0.04	0.00	0.0	0.0	0.25
0.6	0.09	0.1	5.955796108	179.6	0.12	0.07	0.00	0.0	0.0	0.30
1.4	0.10	0.1	6.101517142	181.31	0.17	0.14	0.01	0.1	0.0	0.43
0.3	0.12	0.1	6.21266814	175.1	0.18	0.16	0.01	0.1	0.0	0.45
0.3	0.13	0.1	6.247506009	152.78	0.18	0.17	0.01	0.1	0.0	0.48
0.2	0.13	0.1	6.276199566	127.85	0.19	0.17	0.01	0.1	0.0	0.49
2.4	0.14	0.2	6.379800574	125.24	0.24	0.20	0.01	0.1	0.0	0.61
0.4	0.18	0.2	6.483736627	144.86	0.25	0.21	0.01	0.1	0.0	0.64
0.2	0.18	0.2	6.498766032	166.01	0.25	0.21	0.01	0.1	0.0	0.65
1.1	0.19	0.2	6.524371794	161.96	0.28	0.26	0.01	0.1	0.0	0.73
0.9	0.20	0.2	6.558047326	156.38	0.31	0.28	0.02	0.1	0.0	0.80
3.2	0.22	0.3	6.583699636	155.75	0.40	0.39	0.02	0.2	0.0	1.03
9.1	0.27	0.4	6.531233873	157.73	0.65	0.69	0.04	0.3	0.0	1.68
0.5	0.42	0.4	6.461711867	166.91	0.67	0.71	0.04	0.4	0.0	1.72
5.6	0.43	0.5	6.440413134	174.83	0.85	0.99	0.05	0.5	0.0	2.20
7.0	0.53	0.6	6.46306885	176.27	1.08	1.36	0.08	0.8	0.0	2.80
3.1	0.64	0.7	6.537410355	176.72	1.18	1.53	0.09	0.9	0.0	3.06
11.8	0.69	0.9	6.693482457	174.29	1.57	2.17	0.13	1.3	0.0	4.04
11.6	0.89	1.1	6.766556376	171.05	1.92	2.76	0.17	1.6	0.0	4.97
15.0	1.08	1.3	6.858727312	169.61	2.37	3.52	0.21	2.1	0.0	6.13
1.7	1.33	1.4	7	169.88	2.42	3.61	0.22	2.1	0.0	6.25
43.3	1.36	2.1	7	169.88	3.71	5.83	0.36	3.5	0.0	9.56
45.0	2.08	2.8	7	167.81	4.92	7.86	0.50	4.9	0.0	12.68
130.0	2.83	5.0	7	163.76	8.00	12.96	0.83	8.1	0.0	20.65
72.5	5.00	6.2	7	154.31	9.20	14.95	0.95	9.3	0.0	23.74
0.0	6.21	6.2	7	143.69	9.20	14.95	0.95	9.3	0.0	23.74
15.0	6.21	6.5	7	140.36	9.38	15.20	0.97	9.4	0.0	24.20
2.5	6.46	6.5	7	147.47	9.41	15.25	0.97	9.4	0.0	24.28
13.3	6.50	6.7	7	157.46	9.61	15.64	0.98	9.5	0.0	24.80
76.7	6.72	8.0	7	155.57	10.72	17.74	1.02	9.9	0.0	27.65
125.0	8.00	10.1	7	145.31	12.04	20.06	1.06	10.3	0.0	31.07
42595.0	10.08	720.0	7	124.9093573	56.39	348.50	5.27	51.2	0.0	145.49

8", Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.4	0.08	0.1	6.263559046	145.22	0.00	0.01	0.00	0.0	0.0	0.01
0.6	0.09	0.1	6.362007449	179.6	0.00	0.01	0.00	0.0	0.0	0.01
1.4	0.10	0.1	6.535387288	181.31	0.01	0.02	0.01	0.1	0.0	0.01
0.3	0.12	0.1	6.667101585	175.1	0.01	0.02	0.01	0.1	0.0	0.01
0.3	0.13	0.1	6.708018233	152.78	0.01	0.02	0.01	0.1	0.0	0.01
0.2	0.13	0.1	6.741619463	127.85	0.01	0.02	0.01	0.1	0.0	0.02
2.4	0.14	0.2	6.860565384	125.24	0.01	0.03	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.979204489	144.86	0.01	0.03	0.01	0.1	0.0	0.02
0.2	0.18	0.2	6.995767406	166.01	0.01	0.03	0.01	0.1	0.0	0.02
1.1	0.19	0.2	7.023144227	161.96	0.01	0.03	0.01	0.1	0.0	0.02
0.9	0.20	0.2	7.058137548	156.38	0.01	0.04	0.01	0.1	0.0	0.02
3.2	0.22	0.3	7.076819162	155.75	0.01	0.05	0.02	0.2	0.0	0.03
9.1	0.27	0.4	6.981620235	157.73	0.02	0.09	0.03	0.3	0.0	0.05
0.5	0.42	0.4	6.8747363	166.91	0.02	0.10	0.03	0.3	0.0	0.05
5.6	0.43	0.5	6.84296879	174.83	0.03	0.13	0.05	0.4	0.0	0.07
7.0	0.53	0.6	6.867159781	176.27	0.03	0.18	0.07	0.6	0.0	0.09
3.1	0.64	0.7	6.962169176	176.72	0.04	0.20	0.07	0.6	0.0	0.10
11.8	0.69	0.9	7.170183536	174.29	0.05	0.28	0.11	0.9	0.0	0.13
11.6	0.89	1.1	7.286433118	171.05	0.06	0.36	0.14	1.1	0.1	0.16
15.0	1.08	1.3	7.269376604	169.61	0.08	0.46	0.18	1.4	0.1	0.20
1.7	1.33	1.4	7.3	169.88	0.08	0.47	0.19	1.5	0.1	0.21
43.3	1.36	2.1	7.3	169.88	0.12	0.59	0.31	1.8	0.3	0.32
45.0	2.08	2.8	7.3	167.81	0.17	0.66	0.42	2.1	0.5	0.44
130.0	2.83	5.0	7.3	163.76	0.29	0.85	0.70	2.6	0.9	0.76
72.5	5.00	6.2	7.3	154.31	0.36	0.93	0.81	2.9	1.1	0.92
0.0	6.21	6.2	7.3	143.69	0.36	0.93	0.81	2.9	1.1	0.92
15.0	6.21	6.5	7.3	140.36	0.37	0.94	0.82	2.9	1.1	0.95
2.5	6.46	6.5	7.3	147.47	0.37	0.95	0.82	2.9	1.2	0.96
13.3	6.50	6.7	7.3	157.46	0.38	0.96	0.83	3.0	1.1	0.99
76.7	6.72	8.0	7.3	155.57	0.45	1.05	0.84	3.3	1.1	1.16
125.0	8.00	10.1	7.3	145.31	0.55	1.16	0.85	3.6	1.1	1.41
42595.0	10.08	720.0	7.3	124.9093573	1.72	15.88	2.83	27.5	0.0	4.44

8", Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0027	0.0048	0.0008	0.008	0.000	0.007
0.4	0.08	0.1	6.263559046	145.22	0.00	0.01	0.00	0.0	0.0	0.01
0.6	0.09	0.1	6.362007449	179.6	0.00	0.01	0.00	0.0	0.0	0.01
1.4	0.10	0.1	6.535387288	181.31	0.01	0.02	0.01	0.1	0.0	0.01
0.3	0.12	0.1	6.667101585	175.1	0.01	0.02	0.01	0.1	0.0	0.01
0.3	0.13	0.1	6.708018233	152.78	0.01	0.02	0.01	0.1	0.0	0.01
0.2	0.13	0.1	6.741619463	127.85	0.01	0.02	0.01	0.1	0.0	0.02
2.4	0.14	0.2	6.860565384	125.24	0.01	0.03	0.01	0.1	0.0	0.02
0.4	0.18	0.2	6.979204489	144.86	0.01	0.03	0.01	0.1	0.0	0.02
0.2	0.18	0.2	6.995767406	166.01	0.01	0.03	0.01	0.1	0.0	0.02
1.1	0.19	0.2	7.023144227	161.96	0.01	0.03	0.01	0.1	0.0	0.02
0.9	0.20	0.2	7.058137548	156.38	0.01	0.04	0.01	0.1	0.0	0.02
3.2	0.22	0.3	7.076819162	155.75	0.01	0.05	0.02	0.2	0.0	0.03
9.1	0.27	0.4	6.981620235	157.73	0.02	0.09	0.03	0.3	0.0	0.05
0.5	0.42	0.4	6.8747363	166.91	0.02	0.10	0.03	0.3	0.0	0.05
5.6	0.43	0.5	6.84296879	174.83	0.03	0.13	0.05	0.4	0.0	0.07
7.0	0.53	0.6	6.867159781	176.27	0.03	0.18	0.07	0.6	0.0	0.09
3.1	0.64	0.7	6.962169176	176.72	0.04	0.20	0.07	0.6	0.0	0.10
11.8	0.69	0.9	7.170183536	174.29	0.05	0.28	0.11	0.9	0.0	0.13
11.6	0.89	1.1	7.286433118	171.05	0.06	0.36	0.14	1.1	0.1	0.16
15.0	1.08	1.3	7.269376604	169.61	0.08	0.46	0.18	1.4	0.1	0.20
1.7	1.33	1.4	7.3	169.88	0.08	0.47	0.19	1.5	0.1	0.21
43.3	1.36	2.1	7.3	169.88	0.12	0.59	0.31	1.8	0.3	0.32
45.0	2.08	2.8	7.3	167.81	0.17	0.66	0.42	2.1	0.5	0.44
130.0	2.83	5.0	7.3	163.76	0.29	0.85	0.70	2.6	0.9	0.76
72.5	5.00	6.2	7.3	154.31	0.36	0.93	0.81	2.9	1.1	0.92
0.0	6.21	6.2	7.3	143.69	0.36	0.93	0.81	2.9	1.1	0.92
15.0	6.21	6.5	7.3	140.36	0.37	0.94	0.82	2.9	1.1	0.95
2.5	6.46	6.5	7.3	147.47	0.37	0.95	0.82	2.9	1.2	0.96
13.3	6.50	6.7	7.3	157.46	0.38	0.96	0.83	3.0	1.1	0.99
76.7	6.72	8.0	7.3	155.57	0.45	1.05	0.84	3.3	1.1	1.16
125.0	8.00	10.1	7.3	145.31	0.55	1.16	0.85	3.6	1.1	1.41
42595.0	10.08	720.0	7.3	124.9093573	1.72	15.88	2.83	27.6	0.0	4.44

8", Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0881	0.0364	0.0010	0.010	0.000	0.227
0.4	0.08	0.1	6.263559046	145.22	0.10	0.04	0.00	0.0	0.0	0.25
0.6	0.09	0.1	6.362007449	179.6	0.12	0.08	0.00	0.0	0.0	0.31
1.4	0.10	0.1	6.535387288	181.31	0.17	0.17	0.01	0.1	0.0	0.44
0.3	0.12	0.1	6.667101585	175.1	0.18	0.18	0.01	0.1	0.0	0.46
0.3	0.13	0.1	6.708018233	152.78	0.19	0.19	0.01	0.1	0.0	0.49
0.2	0.13	0.1	6.741619463	127.85	0.19	0.20	0.01	0.1	0.0	0.50
2.4	0.14	0.2	6.860565384	125.24	0.24	0.23	0.01	0.1	0.0	0.62
0.4	0.18	0.2	6.979204489	144.86	0.25	0.24	0.01	0.1	0.0	0.65
0.2	0.18	0.2	6.995767406	166.01	0.26	0.25	0.01	0.1	0.0	0.66
1.1	0.19	0.2	7.023144227	161.96	0.29	0.30	0.02	0.2	0.0	0.75
0.9	0.20	0.2	7.058137548	156.38	0.32	0.33	0.02	0.2	0.0	0.81
3.2	0.22	0.3	7.076819162	155.75	0.41	0.46	0.02	0.2	0.0	1.05
9.1	0.27	0.4	6.981620235	157.73	0.67	0.81	0.04	0.4	0.0	1.72
0.5	0.42	0.4	6.8747363	166.91	0.68	0.84	0.04	0.4	0.0	1.76
5.6	0.43	0.5	6.84296879	174.83	0.87	1.17	0.07	0.6	0.0	2.25
7.0	0.53	0.6	6.867159781	176.27	1.11	1.60	0.09	0.9	0.0	2.86
3.1	0.64	0.7	6.962169176	176.72	1.21	1.79	0.11	1.0	0.0	3.12
11.8	0.69	0.9	7.170183536	174.29	1.60	2.55	0.16	1.5	0.0	4.13
11.6	0.89	1.1	7.286433118	171.05	1.97	3.27	0.20	2.0	0.0	5.07
15.0	1.08	1.3	7.269376604	169.61	2.42	4.15	0.26	2.5	0.0	6.24
1.7	1.33	1.4	7.3	169.88	2.47	4.25	0.27	2.6	0.0	6.37
43.3	1.36	2.1	7.3	169.88	3.75	6.64	0.43	4.2	0.0	9.66
45.0	2.08	2.8	7.3	167.81	4.93	8.87	0.59	5.7	0.0	12.73
130.0	2.83	5.0	7.3	163.76	7.92	14.43	0.96	9.4	0.0	20.45
72.5	5.00	6.2	7.3	154.31	9.03	16.54	1.10	10.7	0.0	23.29
0.0	6.21	6.2	7.3	143.69	9.03	16.54	1.10	10.7	0.0	23.29
15.0	6.21	6.5	7.3	140.36	9.18	16.80	1.12	10.9	0.0	23.69
2.5	6.46	6.5	7.3	147.47	9.21	16.86	1.12	10.9	0.0	23.77
13.3	6.50	6.7	7.3	157.46	9.39	17.27	1.13	11.0	0.0	24.24
76.7	6.72	8.0	7.3	155.57	10.38	19.47	1.18	11.5	0.0	26.79
125.0	8.00	10.1	7.3	145.31	11.52	21.85	1.22	11.9	0.0	29.73
42595.0	10.08	720.0	7.3	124.9093573	56.39	325.43	5.45	53.0	0.0	145.49

8", Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	119.75	0.0881	0.0364	0.0010	0.009	0.000	0.227
0.4	0.08	0.1	6.263559046	145.22	0.10	0.04	0.00	0.0	0.0	0.25
0.6	0.09	0.1	6.362007449	179.6	0.12	0.08	0.00	0.0	0.0	0.31
1.4	0.10	0.1	6.535387288	181.31	0.17	0.17	0.01	0.1	0.0	0.44
0.3	0.12	0.1	6.667101585	175.1	0.18	0.18	0.01	0.1	0.0	0.46
0.3	0.13	0.1	6.708018233	152.78	0.19	0.19	0.01	0.1	0.0	0.49
0.2	0.13	0.1	6.741619463	127.85	0.19	0.20	0.01	0.1	0.0	0.50
2.4	0.14	0.2	6.860565384	125.24	0.24	0.23	0.01	0.1	0.0	0.62
0.4	0.18	0.2	6.979204489	144.86	0.25	0.24	0.01	0.1	0.0	0.65
0.2	0.18	0.2	6.995767406	166.01	0.26	0.25	0.01	0.1	0.0	0.67
1.1	0.19	0.2	7.023144227	161.96	0.29	0.30	0.01	0.1	0.0	0.75
0.9	0.20	0.2	7.058137548	156.38	0.32	0.33	0.01	0.1	0.0	0.82
3.2	0.22	0.3	7.076819162	155.75	0.41	0.46	0.02	0.2	0.0	1.05
9.1	0.27	0.4	6.981620235	157.73	0.67	0.81	0.03	0.3	0.0	1.73
0.5	0.42	0.4	6.8747363	166.91	0.69	0.84	0.03	0.3	0.0	1.77
5.6	0.43	0.5	6.84296879	174.83	0.87	1.17	0.05	0.5	0.0	2.26
7.0	0.53	0.6	6.867159781	176.27	1.11	1.60	0.07	0.7	0.0	2.87
3.1	0.64	0.7	6.962169176	176.72	1.22	1.79	0.08	0.8	0.0	3.14
11.8	0.69	0.9	7.170183536	174.29	1.61	2.56	0.12	1.1	0.0	4.15
11.6	0.89	1.1	7.286433118	171.05	1.98	3.28	0.15	1.5	0.0	5.11
15.0	1.08	1.3	7.269376604	169.61	2.44	4.16	0.19	1.9	0.0	6.31
1.7	1.33	1.4	7.3	169.88	2.50	4.26	0.20	1.9	0.0	6.44
43.3	1.36	2.1	7.3	169.88	3.80	6.67	0.36	3.5	0.0	9.81
45.0	2.08	2.8	7.3	167.81	5.04	8.93	0.52	5.1	0.0	13.01
130.0	2.83	5.0	7.3	163.76	8.21	14.60	0.90	8.8	0.0	21.17
72.5	5.00	6.2	7.3	154.31	9.45	16.80	1.04	10.1	0.0	24.37
0.0	6.21	6.2	7.3	143.69	9.45	16.80	1.04	10.1	0.0	24.37
15.0	6.21	6.5	7.3	140.36	9.63	17.08	1.06	10.3	0.0	24.85
2.5	6.46	6.5	7.3	147.47	9.66	17.14	1.06	10.3	0.0	24.93
13.3	6.50	6.7	7.3	157.46	9.87	17.57	1.07	10.4	0.0	25.47
76.7	6.72	8.0	7.3	155.57	11.02	19.88	1.12	10.9	0.0	28.43
125.0	8.00	10.1	7.3	145.31	12.41	22.44	1.16	11.3	0.0	32.01
42595.0	10.08	720.0	7.3	124.9093573	56.39	377.21	5.91	57.4	0.0	145.49

15", Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	124.88	0.0028	0.0050	0.0009	0.009	0.000	0.007
0.5	0.08	0.1	5.886251274	176.45	0.00	0.01	0.00	0.0	0.0	0.01
0.5	0.09	0.1	5.972672788	222.89	0.00	0.01	0.01	0.0	0.0	0.01
0.4	0.10	0.1	6.048082675	217.49	0.00	0.02	0.01	0.1	0.0	0.01
0.3	0.11	0.1	6.098855354	170.78	0.01	0.02	0.01	0.1	0.0	0.01
2.1	0.11	0.1	6.231258759	127.04	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.15	0.2	6.361109411	156.29	0.01	0.02	0.01	0.1	0.0	0.02
2.1	0.15	0.2	6.441751928	186.26	0.01	0.04	0.02	0.1	0.0	0.02
1.9	0.19	0.2	6.538889581	181.4	0.01	0.05	0.03	0.2	0.0	0.03
2.7	0.22	0.3	6.584579609	177.8	0.01	0.07	0.03	0.2	0.0	0.04
6.8	0.27	0.4	6.553598832	178.97	0.02	0.11	0.05	0.3	0.0	0.06
1.1	0.38	0.4	6.499700314	184.19	0.02	0.12	0.06	0.4	0.0	0.06
16.2	0.40	0.7	6.51240194	188.96	0.04	0.24	0.12	0.7	0.1	0.11
10.0	0.67	0.8	6.651001912	186.35	0.05	0.31	0.16	1.0	0.1	0.14
10.0	0.83	1.0	6.788730328	182.48	0.06	0.38	0.19	1.2	0.2	0.17
20.0	1.00	1.3	6.904995328	182.39	0.09	0.53	0.26	1.7	0.2	0.23
1.7	1.33	1.4	7	178.97	0.09	0.54	0.27	1.7	0.2	0.23
51.7	1.36	2.2	7	168.71	0.14	0.62	0.38	1.9	0.4	0.36
60.0	2.22	3.2	7	156.92	0.19	0.69	0.47	2.1	0.5	0.50
106.7	3.22	5.0	7	149	0.28	0.78	0.58	2.4	0.7	0.72
60.0	5.00	6.0	7	142.88	0.32	0.82	0.62	2.6	0.8	0.84
9.2	6.00	6.2	7	137.48	0.33	0.83	0.63	2.6	0.8	0.85
3.3	6.15	6.2	7	135.05	0.33	0.83	0.63	2.6	0.8	0.86
17.5	6.21	6.5	7	135.77	0.35	0.84	0.64	2.6	0.8	0.89
30.0	6.50	7.0	7	136.58	0.37	0.86	0.64	2.7	0.8	0.95
60.0	7.00	8.0	7	135.86	0.41	0.89	0.65	2.8	0.8	1.05
125.0	8.00	10.1	7	132.8	0.49	0.96	0.66	3.0	0.8	1.27
6595.0	10.08	120.0	7	128.8756342	1.71	4.04	0.97	9.4	0.0	4.41
7200.0	120.00	240.0	7	125.5620027	1.71	6.82	1.26	12.2	0.0	4.41
7200.0	240.00	360.0	7	122.1034712	1.71	9.09	1.50	14.6	0.0	4.42
7200.0	360.00	480.0	7	118.6449397	1.71	10.91	1.71	16.7	0.0	4.42
7200.0	480.00	600.0	7	115.1864082	1.72	12.38	1.89	18.4	0.0	4.43
7200.0	600.00	720.0	7	111.7278766	1.72	13.54	2.04	19.8	0.0	4.44

15", Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	124.88	0.0028	0.0050	0.0009	0.009	0.000	0.007
0.5	0.08	0.1	5.886251274	176.45	0.00	0.01	0.00	0.0	0.0	0.01
0.5	0.09	0.1	5.972672788	222.89	0.00	0.01	0.01	0.0	0.0	0.01
0.4	0.10	0.1	6.048082675	217.49	0.00	0.02	0.01	0.1	0.0	0.01
0.3	0.11	0.1	6.098855354	170.78	0.01	0.02	0.01	0.1	0.0	0.01
2.1	0.11	0.1	6.231258759	127.04	0.01	0.02	0.01	0.1	0.0	0.02
0.4	0.15	0.2	6.361109411	156.29	0.01	0.02	0.01	0.1	0.0	0.02
2.1	0.15	0.2	6.441751928	186.26	0.01	0.04	0.02	0.1	0.0	0.02
1.9	0.19	0.2	6.538889581	181.4	0.01	0.05	0.03	0.2	0.0	0.03
2.7	0.22	0.3	6.584579609	177.8	0.01	0.07	0.03	0.2	0.0	0.04
6.8	0.27	0.4	6.553598832	178.97	0.02	0.11	0.05	0.3	0.0	0.06
1.1	0.38	0.4	6.499700314	184.19	0.02	0.12	0.06	0.4	0.0	0.06
16.2	0.40	0.7	6.51240194	188.96	0.04	0.24	0.12	0.7	0.1	0.11
10.0	0.67	0.8	6.651001912	186.35	0.05	0.31	0.16	1.0	0.1	0.14
10.0	0.83	1.0	6.788730328	182.48	0.06	0.38	0.19	1.2	0.2	0.17
20.0	1.00	1.3	6.904995328	182.39	0.09	0.53	0.26	1.7	0.2	0.23
1.7	1.33	1.4	7	178.97	0.09	0.54	0.27	1.7	0.2	0.23
51.7	1.36	2.2	7	168.71	0.14	0.62	0.38	1.9	0.4	0.36
60.0	2.22	3.2	7	156.92	0.19	0.69	0.47	2.1	0.5	0.50
106.7	3.22	5.0	7	149	0.28	0.78	0.58	2.4	0.7	0.72
60.0	5.00	6.0	7	142.88	0.33	0.82	0.62	2.6	0.8	0.84
9.2	6.00	6.2	7	137.48	0.33	0.83	0.63	2.6	0.8	0.86
3.3	6.15	6.2	7	135.05	0.33	0.83	0.63	2.6	0.8	0.86
17.5	6.21	6.5	7	135.77	0.35	0.84	0.64	2.6	0.8	0.89
30.0	6.50	7.0	7	136.58	0.37	0.86	0.64	2.7	0.8	0.95
60.0	7.00	8.0	7	135.86	0.41	0.89	0.65	2.8	0.8	1.05
125.0	8.00	10.1	7	132.8	0.49	0.96	0.66	3.0	0.8	1.27
6595.0	10.08	120.0	7	128.8756342	1.71	4.05	0.97	9.4	0.0	4.41
7200.0	120.00	240.0	7	125.5620027	1.71	6.88	1.26	12.2	0.0	4.41
7200.0	240.00	360.0	7	122.1034712	1.71	9.22	1.51	14.6	0.0	4.42
7200.0	360.00	480.0	7	118.6449397	1.71	11.15	1.72	16.7	0.0	4.42
7200.0	480.00	600.0	7	115.1864082	1.72	12.73	1.89	18.4	0.0	4.43
7200.0	600.00	720.0	7	111.7278766	1.72	14.01	2.04	19.8	0.0	4.44

15", Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	124.88	0.0922	0.0389	0.0012	0.012	0.000	0.238
0.5	0.08	0.1	5.886251274	176.45	0.11	0.06	0.00	0.0	0.0	0.28
0.5	0.09	0.1	5.972672788	222.89	0.14	0.13	0.01	0.1	0.0	0.35
0.4	0.10	0.1	6.048082675	217.49	0.16	0.19	0.02	0.2	0.0	0.41
0.3	0.11	0.1	6.098855354	170.78	0.17	0.20	0.02	0.2	0.0	0.43
2.1	0.11	0.1	6.231258759	127.04	0.21	0.22	0.02	0.2	0.0	0.54
0.4	0.15	0.2	6.361109411	156.29	0.22	0.24	0.02	0.2	0.0	0.56
2.1	0.15	0.2	6.441751928	186.26	0.30	0.38	0.03	0.3	0.0	0.77
1.9	0.19	0.2	6.538889581	181.4	0.37	0.50	0.04	0.4	0.0	0.94
2.7	0.22	0.3	6.584579609	177.8	0.46	0.65	0.05	0.5	0.0	1.19
6.8	0.27	0.4	6.553598832	178.97	0.70	1.05	0.08	0.7	0.0	1.80
1.1	0.38	0.4	6.499700314	184.19	0.74	1.12	0.08	0.8	0.0	1.90
16.2	0.40	0.7	6.51240194	188.96	1.34	2.32	0.17	1.7	0.0	3.47
10.0	0.67	0.8	6.651001912	186.35	1.70	3.04	0.23	2.2	0.0	4.39
10.0	0.83	1.0	6.788730328	182.48	2.04	3.72	0.28	2.7	0.0	5.26
20.0	1.00	1.3	6.904995328	182.39	2.71	5.14	0.38	3.7	0.0	6.99
1.7	1.33	1.4	7	178.97	2.76	5.25	0.39	3.8	0.0	7.12
51.7	1.36	2.2	7	168.71	4.19	7.63	0.55	5.3	0.0	10.82
60.0	2.22	3.2	7	156.92	5.50	9.53	0.66	6.4	0.0	14.18
106.7	3.22	5.0	7	149	7.35	12.07	0.80	7.8	0.0	18.96
60.0	5.00	6.0	7	142.88	8.12	13.17	0.87	8.4	0.0	20.94
9.2	6.00	6.2	7	137.48	8.21	13.30	0.87	8.5	0.0	21.19
3.3	6.15	6.2	7	135.05	8.25	13.35	0.87	8.5	0.0	21.28
17.5	6.21	6.5	7	135.77	8.42	13.59	0.89	8.6	0.0	21.72
30.0	6.50	7.0	7	136.58	8.71	14.01	0.89	8.7	0.0	22.48
60.0	7.00	8.0	7	135.86	9.27	14.82	0.91	8.8	0.0	23.90
125.0	8.00	10.1	7	132.8	10.24	16.28	0.93	9.0	0.0	26.41
6595.0	10.08	120.0	7	128.8756342	47.09	78.28	1.77	17.2	0.0	121.49
7200.0	120.00	240.0	7	125.5620027	47.09	78.28	2.03	19.8	0.0	121.50
7200.0	240.00	360.0	7	122.1034712	47.09	78.28	2.26	22.0	0.0	121.50
7200.0	360.00	480.0	7	118.6449397	47.10	78.28	2.45	23.8	0.0	121.51
7200.0	480.00	600.0	7	115.1864082	47.10	78.28	2.62	25.4	0.0	121.52
7200.0	600.00	720.0	7	111.7278766	47.10	78.28	2.75	26.8	0.0	121.52

15", Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	124.88	0.0922	0.0389	0.0012	0.012	0.000	0.238
0.5	0.08	0.1	5.886251274	176.45	0.11	0.06	0.00	0.0	0.0	0.28
0.5	0.09	0.1	5.972672788	222.89	0.14	0.13	0.01	0.1	0.0	0.35
0.4	0.10	0.1	6.048082675	217.49	0.16	0.19	0.02	0.2	0.0	0.41
0.3	0.11	0.1	6.098855354	170.78	0.17	0.20	0.02	0.2	0.0	0.43
2.1	0.11	0.1	6.231258759	127.04	0.21	0.22	0.02	0.2	0.0	0.54
0.4	0.15	0.2	6.361109411	156.29	0.22	0.24	0.02	0.2	0.0	0.56
2.1	0.15	0.2	6.441751928	186.26	0.30	0.38	0.03	0.3	0.0	0.77
1.9	0.19	0.2	6.538889581	181.4	0.37	0.50	0.04	0.4	0.0	0.95
2.7	0.22	0.3	6.584579609	177.8	0.46	0.65	0.05	0.5	0.0	1.19
6.8	0.27	0.4	6.553598832	178.97	0.70	1.05	0.08	0.7	0.0	1.80
1.1	0.38	0.4	6.499700314	184.19	0.74	1.12	0.08	0.8	0.0	1.90
16.2	0.40	0.7	6.51240194	188.96	1.35	2.32	0.17	1.7	0.0	3.48
10.0	0.67	0.8	6.651001912	186.35	1.71	3.04	0.23	2.2	0.0	4.42
10.0	0.83	1.0	6.788730328	182.48	2.06	3.73	0.28	2.7	0.0	5.30
20.0	1.00	1.3	6.904995328	182.39	2.74	5.16	0.38	3.7	0.0	7.07
1.7	1.33	1.4	7	178.97	2.79	5.27	0.39	3.8	0.0	7.20
51.7	1.36	2.2	7	168.71	4.27	7.68	0.55	5.4	0.0	11.02
60.0	2.22	3.2	7	156.92	5.64	9.61	0.67	6.5	0.0	14.56
106.7	3.22	5.0	7	149	7.64	12.23	0.81	7.9	0.0	19.72
60.0	5.00	6.0	7	142.88	8.51	13.38	0.87	8.5	0.0	21.96
9.2	6.00	6.2	7	137.48	8.62	13.52	0.88	8.5	0.0	22.24
3.3	6.15	6.2	7	135.05	8.66	13.57	0.88	8.5	0.0	22.34
17.5	6.21	6.5	7	135.77	8.86	13.83	0.89	8.7	0.0	22.87
30.0	6.50	7.0	7	136.58	9.21	14.27	0.90	8.7	0.0	23.75
60.0	7.00	8.0	7	135.86	9.86	15.14	0.91	8.9	0.0	25.44
125.0	8.00	10.1	7	132.8	11.04	16.71	0.93	9.1	0.0	28.48
6595.0	10.08	120.0	7	128.8756342	56.38	84.65	1.84	17.9	0.0	145.46
7200.0	120.00	240.0	7	125.5620027	56.38	84.65	2.11	20.5	0.0	145.46
7200.0	240.00	360.0	7	122.1034712	56.38	84.65	2.33	22.7	0.0	145.47
7200.0	360.00	480.0	7	118.6449397	56.39	84.65	2.53	24.5	0.0	145.48
7200.0	480.00	600.0	7	115.1864082	56.39	84.65	2.69	26.1	0.0	145.48
7200.0	600.00	720.0	7	111.7278766	56.39	84.66	2.83	27.5	0.0	145.49

15", Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	124.88	0.0028	0.0055	0.0010	0.010	0.000	0.007
0.5	0.08	0.1	6.278743284	176.45	0.00	0.01	0.00	0.0	0.0	0.01
0.5	0.09	0.1	6.382202355	222.89	0.00	0.02	0.01	0.0	0.0	0.01
0.4	0.10	0.1	6.472173599	217.49	0.00	0.02	0.01	0.1	0.0	0.01
0.3	0.11	0.1	6.532557091	170.78	0.01	0.02	0.01	0.1	0.0	0.01
2.1	0.11	0.1	6.688169643	127.04	0.01	0.03	0.01	0.1	0.0	0.02
0.4	0.15	0.2	6.840218735	156.29	0.01	0.03	0.01	0.1	0.0	0.02
2.1	0.15	0.2	6.931370591	186.26	0.01	0.05	0.02	0.1	0.0	0.02
1.9	0.19	0.2	7.037731775	181.4	0.01	0.06	0.03	0.2	0.0	0.03
2.7	0.22	0.3	7.079015356	177 8	0.01	0.08	0.04	0.3	0.0	0.04
6.8	0.27	0.4	7.01499818	178.97	0.02	0.13	0.06	0.4	0.0	0.06
1.1	0.38	0.4	6.929382476	184.19	0.02	0.14	0.07	0.4	0.0	0.06
16.2	0.40	0.7	6.93703309	188.96	0.04	0.28	0.14	0.9	0.1	0.11
10.0	0.67	0.8	7.112459904	186.35	0.05	0.37	0.19	1.2	0.1	0.14
10.0	0.83	1.0	7.304359296	182.48	0.07	0.46	0.23	1.4	0.2	0.17
20.0	1.00	1.3	7.321059296	182.39	0.09	0.57	0.32	1.8	0.3	0.23
1.7	1.33	1.4	7.3	178.97	0.09	0.57	0.32	1.8	0.3	0.24
51.7	1.36	2.2	7.3	168.71	0.14	0.66	0.46	2.0	0.5	0.37
60.0	2.22	3.2	7.3	156.92	0.20	0.73	0.56	2.3	0.7	0.51
106.7	3.22	5.0	7.3	149	0.29	0.83	0.68	2.6	0.9	0.74
60.0	5.00	6.0	7.3	142.88	0.33	0.88	0.74	2.7	1.0	0.86
9.2	6.00	6.2	7.3	137.48	0.34	0.89	0.75	2.8	1.0	0.87
3.3	6.15	6.2	7.3	135.05	0.34	0.89	0.75	2.8	1.0	0.88
17.5	6.21	6.5	7.3	135.77	0.35	0.90	0.76	2.8	1.0	0.91
30.0	6.50	7.0	7.3	136.58	0.37	0.92	0.76	2.9	1.0	0.96
60.0	7.00	8.0	7.3	135.86	0.42	0.96	0.77	3.0	1.0	1.07
125.0	8.00	10.1	7.3	132.8	0.50	1.03	0.78	3.2	1.0	1.29
6595.0	10.08	120.0	7.3	128.8756342	1.71	4.48	1.14	11.1	0.0	4.41
7200.0	120.00	240.0	7.3	125.5620027	1.71	7.58	1.49	14.5	0.0	4.41
7200.0	240.00	360.0	7.3	122.1034712	1.71	10.09	1.78	17.3	0.0	4.42
7200.0	360.00	480.0	7.3	118.6449397	1.71	12.10	2.03	19.7	0.0	4.42
7200.0	480.00	600.0	7.3	115.1864082	1.72	13.71	2.23	21.7	0.0	4.43
7200.0	600.00	720.0	7.3	111.7278766	1.72	14.98	2.41	23.4	0.0	4.43

15", Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	124.88	0.0028	0.0055	0.0010	0.010	0.000	0.007
0.5	0.08	0.1	6.278743284	176.45	0.00	0.01	0.00	0.0	0.0	0.01
0.5	0.09	0.1	6.382202355	222.89	0.00	0.02	0.01	0.0	0.0	0.01
0.4	0.10	0.1	6.472173599	217.49	0.00	0.02	0.01	0.1	0.0	0.01
0.3	0.11	0.1	6.532557091	170.78	0.01	0.02	0.01	0.1	0.0	0.01
2.1	0.11	0.1	6.688169643	127.04	0.01	0.03	0.01	0.1	0.0	0.02
0.4	0.15	0.2	6.840218735	156.29	0.01	0.03	0.01	0.1	0.0	0.02
2.1	0.15	0.2	6.931370591	186.26	0.01	0.05	0.02	0.1	0.0	0.02
1.9	0.19	0.2	7.037731775	181.4	0.01	0.06	0.03	0.2	0.0	0.03
2.7	0.22	0.3	7.079015356	177.8	0.01	0.08	0.04	0.3	0.0	0.04
6.8	0.27	0.4	7.01499818	178.97	0.02	0.13	0.06	0.4	0.0	0.06
1.1	0.38	0.4	6.929382476	184.19	0.02	0.14	0.07	0.4	0.0	0.06
16.2	0.40	0.7	6.93703309	188.96	0.04	0.28	0.14	0.9	0.1	0.11
10.0	0.67	0.8	7.112459904	186.35	0.05	0.37	0.19	1.2	0.1	0.14
10.0	0.83	1.0	7.304359296	182.48	0.07	0.46	0.23	1.4	0.2	0.17
20.0	1.00	1.3	7.321059296	182.39	0.09	0.57	0.32	1.8	0.3	0.23
1.7	1.33	1.4	7.3	178.97	0.09	0.57	0.32	1.8	0.3	0.24
51.7	1.36	2.2	7.3	168.71	0.14	0.66	0.46	2.0	0.5	0.37
60.0	2.22	3.2	7.3	156.92	0.20	0.73	0.56	2.3	0.7	0.51
106.7	3.22	5.0	7.3	149	0.29	0.83	0.68	2.6	0.9	0.74
60.0	5.00	6.0	7.3	142.88	0.33	0.88	0.74	2.7	1.0	0.86
9.2	6.00	6.2	7.3	137.48	0.34	0.89	0.75	2.8	1.0	0.87
3.3	6.15	6.2	7.3	135.05	0.34	0.89	0.75	2.8	1.0	0.88
17.5	6.21	6.5	7.3	135.77	0.35	0.90	0.76	2.8	1.0	0.91
30.0	6.50	7.0	7.3	136.58	0.37	0.92	0.76	2.9	1.0	0.97
60.0	7.00	8.0	7.3	135.86	0.42	0.96	0.77	3.0	1.0	1.08
125.0	8.00	10.1	7.3	132.8	0.50	1.03	0.78	3.2	1.0	1.29
6595.0	10.08	120.0	7.3	128.8756342	1.71	4.49	1.14	11.1	0.0	4.41
7200.0	120.00	240.0	7.3	125.5620027	1.71	7.65	1.49	14.5	0.0	4.41
7200.0	240.00	360.0	7.3	122.1034712	1.71	10.25	1.78	17.3	0.0	4.42
7200.0	360.00	480.0	7.3	118.6449397	1.71	12.38	2.03	19.7	0.0	4.42
7200.0	480.00	600.0	7.3	115.1864082	1.72	14.12	2.24	21.7	0.0	4.43
7200.0	600.00	720.0	7.3	111.7278766	1.72	15.52	2.41	23.5	0.0	4.43

15", Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	124.88	0.0936	0.0425	0.0013	0.013	0.000	0.241
0.5	0.08	0.1	6.278743284	176.45	0.11	0.07	0.00	0.0	0.0	0.29
0.5	0.09	0.1	6.382202355	222.89	0.14	0.15	0.01	0.1	0.0	0.36
0.4	0.10	0.1	6.472173599	217.49	0.16	0.22	0.02	0.2	0.0	0.42
0.3	0.11	0.1	6.532557091	170.78	0.17	0.23	0.02	0.2	0.0	0.44
2.1	0.11	0.1	6.688169643	127.04	0.21	0.26	0.02	0.2	0.0	0.55
0.4	0.15	0.2	6.840218735	156.29	0.22	0.27	0.02	0.2	0.0	0.58
2.1	0.15	0.2	6.931370591	186.26	0.30	0.44	0.04	0.3	0.0	0.78
1.9	0.19	0.2	7.037731775	181.4	0.38	0.59	0.05	0.4	0.0	0.97
2.7	0.22	0.3	7.079015356	177.8	0.47	0.78	0.06	0.6	0.0	1.22
6.8	0.27	0.4	7.01499818	178.97	0.72	1.25	0.09	0.9	0.0	1.85
1.1	0.38	0.4	6.929382476	184.19	0.76	1.33	0.10	0.9	0.0	1.95
16.2	0.40	0.7	6.93703309	188.96	1.38	2.73	0.21	2.0	0.0	3.56
10.0	0.67	0.8	7.112459904	186.35	1.75	3.59	0.27	2.6	0.0	4.51
10.0	0.83	1.0	7.304359296	182.48	2.10	4.42	0.33	3.2	0.0	5.42
20.0	1.00	1.3	7.321059296	182.39	2.79	6.01	0.46	4.4	0.0	7.20
1.7	1.33	1.4	7.3	178.97	2.84	6.12	0.47	4.5	0.0	7.33
51.7	1.36	2.2	7.3	168.71	4.31	8.77	0.65	6.3	0.0	11.12
60.0	2.22	3.2	7.3	156.92	5.64	10.86	0.78	7.6	0.0	14.56
106.7	3.22	5.0	7.3	149	7.55	13.67	0.95	9.2	0.0	19.48
60.0	5.00	6.0	7.3	142.88	8.35	14.88	1.02	9.9	0.0	21.54
9.2	6.00	6.2	7.3	137.48	8.45	15.03	1.02	10.0	0.0	21.80
3.3	6.15	6.2	7.3	135.05	8.48	15.08	1.03	10.0	0.0	21.89
17.5	6.21	6.5	7.3	135.77	8.66	15.34	1.04	10.1	0.0	22.35
30.0	6.50	7.0	7.3	136.58	8.97	15.80	1.05	10.2	0.0	23.15
60.0	7.00	8.0	7.3	135.86	9.55	16.69	1.06	10.3	0.0	24.63
125.0	8.00	10.1	7.3	132.8	10.57	18.28	1.09	10.6	0.0	27.26
6595.0	10.08	120.0	7.3	128.8756342	49.71	85.43	2.03	19.7	0.0	128.25
7200.0	120.00	240.0	7.3	125.5620027	49.71	85.43	2.35	22.8	0.0	128.26
7200.0	240.00	360.0	7.3	122.1034712	49.71	85.43	2.61	25.4	0.0	128.26
7200.0	360.00	480.0	7.3	118.6449397	49.72	85.43	2.84	27.6	0.0	128.27
7200.0	480.00	600.0	7.3	115.1864082	49.72	85.43	3.04	29.5	0.0	128.27
7200.0	600.00	720.0	7.3	111.7278766	49.72	85.43	3.20	31.1	0.0	128.28

15", Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	124.88	0.0936	0.0425	0.0013	0.013	0.000	0.241
0.5	0.08	0.1	6.278743284	176.45	0.11	0.07	0.00	0.0	0.0	0.29
0.5	0.09	0.1	6.382202355	222.89	0.14	0.15	0.01	0.1	0.0	0.36
0.4	0.10	0.1	6.472173599	217.49	0.16	0.22	0.02	0.2	0.0	0.42
0.3	0.11	0.1	6.532557091	170.78	0.17	0.23	0.02	0.2	0.0	0.44
2.1	0.11	0.1	6.688169643	127.04	0.21	0.26	0.02	0.2	0.0	0.55
0.4	0.15	0.2	6.840218735	156.29	0.22	0.27	0.02	0.2	0.0	0.58
2.1	0.15	0.2	6.931370591	186.26	0.30	0.44	0.04	0.3	0.0	0.79
1.9	0.19	0.2	7.037731775	181.4	0.38	0.59	0.05	0.4	0.0	0.97
2.7	0.22	0.3	7.079015356	177.8	0.47	0.78	0.06	0.6	0.0	1.22
6.8	0.27	0.4	7.01499818	178.97	0.72	1.25	0.09	0.9	0.0	1.85
1.1	0.38	0.4	6.929382476	184.19	0.76	1.33	0.10	0.9	0.0	1.96
16.2	0.40	0.7	6.93703309	188.96	1.39	2.74	0.21	2.0	0.0	3.58
10.0	0.67	0.8	7.112459904	186.35	1.76	3.60	0.27	2.6	0.0	4.54
10.0	0.83	1.0	7.304359296	182.48	2.12	4.43	0.33	3.2	0.0	5.46
20.0	1.00	1.3	7.321059296	182.39	2.82	6.03	0.46	4.5	0.0	7.27
1.7	1.33	1.4	7.3	178.97	2.87	6.14	0.47	4.5	0.0	7.41
51.7	1.36	2.2	7.3	168.71	4.38	8.82	0.65	6.3	0.0	11.31
60.0	2.22	3.2	7.3	156.92	5.79	10.97	0.78	7.6	0.0	14.93
106.7	3.22	5.0	7.3	149	7.84	13.87	0.95	9.2	0.0	20.24
60.0	5.00	6.0	7.3	142.88	8.74	15.14	1.02	9.9	0.0	22.55
9.2	6.00	6.2	7.3	137.48	8.86	15.29	1.03	10.0	0.0	22.85
3.3	6.15	6.2	7.3	135.05	8.90	15.34	1.03	10.0	0.0	22.95
17.5	6.21	6.5	7.3	135.77	9.11	15.62	1.05	10.2	0.0	23.50
30.0	6.50	7.0	7.3	136.58	9.47	16.12	1.06	10.3	0.0	24.42
60.0	7.00	8.0	7.3	135.86	10.14	17.06	1.07	10.4	0.0	26.17
125.0	8.00	10.1	7.3	132.8	11.37	18.78	1.09	10.6	0.0	29.35
6595.0	10.08	120.0	7.3	128.8756342	56.38	92.85	2.12	20.6	0.0	145.46
7200.0	120.00	240.0	7.3	125.5620027	56.38	92.85	2.43	23.6	0.0	145.46
7200.0	240.00	360.0	7.3	122.1034712	56.38	92.85	2.70	26.2	0.0	145.47
7200.0	360.00	480.0	7.3	118.6449397	56.39	92.85	2.93	28.5	0.0	145.47
7200.0	480.00	600.0	7.3	115.1864082	56.39	92.85	3.12	30.3	0.0	145.48
7200.0	600.00	720.0	7.3	111.7278766	56.39	92.85	3.29	31.9	0.0	145.49

DEG, Nominal, Case 1

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	133.88	0.0031	0.0062	0.0015	0.014	0.000	0.008
0.3	0.08	0.1	5.86927786	201.92	0.00	0.01	0.00	0.0	0.0	0.01
0.1	0.09	0.1	5.904387024	255.47	0.00	0.01	0.01	0.0	0.0	0.01
0.5	0.09	0.1	5.95620322	252.5	0.00	0.02	0.02	0.1	0.0	0.01
1.0	0.10	0.1	6.069249909	213.8	0.01	0.03	0.03	0.1	0.0	0.02
0.3	0.12	0.1	6.159950177	183.47	0.01	0.03	0.03	0.1	0.0	0.02
0.2	0.12	0.1	6.19277716	191.75	0.01	0.03	0.03	0.1	0.0	0.02
0.4	0.12	0.1	6.228049682	196.88	0.01	0.04	0.03	0.1	0.0	0.02
0.7	0.13	0.1	6.28717116	188.6	0.01	0.04	0.03	0.1	0.0	0.02
0.5	0.14	0.2	6.346160556	176	0.01	0.05	0.04	0.1	0.0	0.02
0.8	0.15	0.2	6.39922935	174.56	0.01	0.05	0.04	0.2	0.0	0.02
3.4	0.17	0.2	6.50090498	179.51	0.01	0.07	0.05	0.2	0.1	0.03
9.9	0.22	0.4	6.536960512	186.17	0.02	0.14	0.08	0.4	0.1	0.06
0.6	0.39	0.4	6.495727234	188.69	0.03	0.14	0.08	0.4	0.1	0.07
20.2	0.40	0.7	6.56063548	187.61	0.05	0.29	0.16	0.9	0.1	0.13
0.5	0.73	0.7	6.637789541	186.62	0.05	0.30	0.16	0.9	0.1	0.13
5.5	0.74	0.8	6.706024089	187.61	0.06	0.34	0.18	1.1	0.2	0.14
10.0	0.83	1.0	6.788730328	188.24	0.07	0.42	0.23	1.3	0.2	0.18
5.0	1.00	1.1	6.76372264	187.52	0.07	0.46	0.25	1.4	0.2	0.19
15.0	1.08	1.3	6.858727312	182.66	0.09	0.56	0.30	1.7	0.3	0.23
1.7	1.33	1.4	7	172.4	0.09	0.56	0.30	1.7	0.3	0.24
43.3	1.36	2.1	7	163.49	0.13	0.61	0.38	1.9	0.4	0.35
45.0	2.08	2.8	7	158.81	0.17	0.67	0.45	2.1	0.5	0.45
23.3	2.83	3.2	7	154.94	0.19	0.69	0.48	2.1	0.6	0.50
46.7	3.22	4.0	7	151.43	0.23	0.73	0.53	2.3	0.7	0.60
60.0	4.00	5.0	7	148.01	0.28	0.78	0.59	2.4	0.8	0.72
60.0	5.00	6.0	7	142.97	0.33	0.83	0.64	2.6	0.8	0.84
30.0	6.00	6.5	7	137.39	0.35	0.84	0.66	2.6	0.9	0.89
30.0	6.50	7.0	7	135.32	0.37	0.86	0.66	2.7	0.9	0.95
60.0	7.00	8.0	7	134.06	0.41	0.89	0.67	2.8	0.8	1.05
125.0	8.00	10.1	7	131.45	0.49	0.96	0.67	3.0	0.8	1.26
13795.0	10.08	240.0	7	126.9958726	1.71	7.04	1.27	12.4	0.0	4.41
28800.0	240.00	720.0	7	116.8554906	1.72	14.47	2.04	19.8	0.0	4.44

DEG, Nominal, Case 2

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	133.88	0.0031	0.0062	0.0015	0.014	0.000	0.008
0.3	0.08	0.1	5.86927786	201.92	0.00	0.01	0.00	0.0	0.0	0.01
0.1	0.09	0.1	5.904387024	255.47	0.00	0.01	0.01	0.0	0.0	0.01
0.5	0.09	0.1	5.95620322	252.5	0.00	0.02	0.02	0.1	0.0	0.01
1.0	0.10	0.1	6.069249909	213.8	0.01	0.03	0.03	0.1	0.0	0.02
0.3	0.12	0.1	6.159950177	183.47	0.01	0.03	0.03	0.1	0.0	0.02
0.2	0.12	0.1	6.19277716	191.75	0.01	0.03	0.03	0.1	0.0	0.02
0.4	0.12	0.1	6.228049682	196.88	0.01	0.04	0.03	0.1	0.0	0.02
0.7	0.13	0.1	6.28717116	188.6	0.01	0.04	0.03	0.1	0.0	0.02
0.5	0.14	0.2	6.346160556	176	0.01	0.05	0.04	0.1	0.0	0.02
0.8	0.15	0.2	6.39922935	174.56	0.01	0.05	0.04	0.2	0.0	0.02
3.4	0.17	0.2	6.50090498	179.51	0.01	0.07	0.05	0.2	0.1	0.03
9.9	0.22	0.4	6.536960512	186.17	0.02	0.14	0.08	0.4	0.1	0.06
0.6	0.39	0.4	6.495727234	188.69	0.03	0.14	0.08	0.4	0.1	0.07
20.2	0.40	0.7	6.56063548	187.61	0.05	0.29	0.16	0.9	0.1	0.13
0.5	0.73	0.7	6.637789541	186.62	0.05	0.30	0.16	0.9	0.1	0.13
5.5	0.74	0.8	6.706024089	187.61	0.06	0.34	0.18	1.1	0.2	0.14
10.0	0.83	1.0	6.788730328	188.24	0.07	0.42	0.23	1.3	0.2	0.18
5.0	1.00	1.1	6.76372264	187.52	0.07	0.46	0.25	1.4	0.2	0.19
15.0	1.08	1.3	6.858727312	182.66	0.09	0.56	0.30	1.7	0.3	0.24
1.7	1.33	1.4	7	172.4	0.09	0.56	0.30	1.7	0.3	0.24
43.3	1.36	2.1	7	163.49	0.13	0.62	0.38	1.9	0.4	0.35
45.0	2.08	2.8	7	158.81	0.17	0.67	0.45	2.1	0.5	0.45
23.3	2.83	3.2	7	154.94	0.19	0.69	0.48	2.1	0.6	0.50
46.7	3.22	4.0	7	151.43	0.23	0.73	0.53	2.3	0.7	0.60
60.0	4.00	5.0	7	148.01	0.28	0.78	0.59	2.4	0.8	0.73
60.0	5.00	6.0	7	142.97	0.33	0.83	0.64	2.6	0.8	0.84
30.0	6.00	6.5	7	137.39	0.35	0.84	0.66	2.6	0.9	0.90
30.0	6.50	7.0	7	135.32	0.37	0.86	0.66	2.7	0.9	0.95
60.0	7.00	8.0	7	134.06	0.41	0.89	0.67	2.8	0.8	1.05
125.0	8.00	10.1	7	131.45	0.49	0.96	0.67	3.0	0.8	1.27
13795.0	10.08	240.0	7	126.9958726	1.71	7.06	1.27	12.4	0.0	4.41
28800.0	240.00	720.0	7	116.8554906	1.72	14.80	2.04	19.9	0.0	4.44

DEG, Nominal, Case 3

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	133.88	0.1023	0.0508	0.0019	0.019	0.000	0.264
0.3	0.08	0.1	5.86927786	201.92	0.11	0.07	0.00	0.0	0.0	0.30
0.1	0.09	0.1	5.904387024	255.47	0.12	0.10	0.01	0.1	0.0	0.31
0.5	0.09	0.1	5.95620322	252.5	0.16	0.24	0.03	0.3	0.0	0.40
1.0	0.10	0.1	6.069249909	213.8	0.20	0.35	0.04	0.4	0.0	0.52
0.3	0.12	0.1	6.159950177	183.47	0.22	0.37	0.05	0.4	0.0	0.56
0.2	0.12	0.1	6.19277716	191.75	0.22	0.38	0.05	0.4	0.0	0.58
0.4	0.12	0.1	6.228049682	196.88	0.24	0.42	0.05	0.5	0.0	0.62
0.7	0.13	0.1	6.28717116	188.6	0.27	0.46	0.05	0.5	0.0	0.69
0.5	0.14	0.2	6.346160556	176	0.29	0.49	0.05	0.5	0.0	0.74
0.8	0.15	0.2	6.39922935	174.56	0.31	0.53	0.06	0.6	0.0	0.80
3.4	0.17	0.2	6.50090498	179.51	0.43	0.73	0.07	0.7	0.0	1.11
9.9	0.22	0.4	6.536960512	186.17	0.80	1.42	0.12	1.2	0.0	2.06
0.6	0.39	0.4	6.495727234	188.69	0.82	1.47	0.13	1.2	0.0	2.13
20.2	0.40	0.7	6.56063548	187.61	1.57	2.93	0.24	2.3	0.0	4.05
0.5	0.73	0.7	6.637789541	186.62	1.59	2.97	0.24	2.3	0.0	4.10
5.5	0.74	0.8	6.706024089	187.61	1.78	3.38	0.27	2.6	0.0	4.60
10.0	0.83	1.0	6.788730328	188.24	2.14	4.17	0.33	3.2	0.0	5.53
5.0	1.00	1.1	6.76372264	187.52	2.31	4.55	0.36	3.5	0.0	5.97
15.0	1.08	1.3	6.858727312	182.66	2.81	5.58	0.44	4.3	0.0	7.24
1.7	1.33	1.4	7	172.4	2.86	5.66	0.44	4.3	0.0	7.37
43.3	1.36	2.1	7	163.49	3.98	7.37	0.55	5.4	0.0	10.28
45.0	2.08	2.8	7	158.81	5.00	8.88	0.65	6.3	0.0	12.90
23.3	2.83	3.2	7	154.94	5.46	9.56	0.69	6.7	0.0	14.09
46.7	3.22	4.0	7	151.43	6.30	10.76	0.75	7.3	0.0	16.26
60.0	4.00	5.0	7	148.01	7.24	12.11	0.83	8.1	0.0	18.69
60.0	5.00	6.0	7	142.97	8.03	13.21	0.89	8.7	0.0	20.70
30.0	6.00	6.5	7	137.39	8.34	13.65	0.91	8.9	0.0	21.52
30.0	6.50	7.0	7	135.32	8.63	14.05	0.92	8.9	0.0	22.27
60.0	7.00	8.0	7	134.06	9.17	14.81	0.93	9.0	0.0	23.67
125.0	8.00	10.1	7	131.45	10.13	16.19	0.95	9.2	0.0	26.14
13795.0	10.08	240.0	7	126.9958726	56.38	136.23	2.51	24.4	0.0	145.46
28800.0	240.00	720.0	7	116.8554906	56.39	136.23	3.22	31.3	0.0	145.49

DEG, Nominal, Case 4

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.168863564	133.88	0.1023	0.0508	0.0019	0.019	0.000	0.264
0.3	0.08	0.1	5.86927786	201.92	0.12	0.07	0.00	0.0	0.0	0.30
0.1	0.09	0.1	5.904387024	255.47	0.12	0.10	0.01	0.1	0.0	0.31
0.5	0.09	0.1	5.95620322	252.5	0.16	0.24	0.03	0.3	0.0	0.40
1.0	0.10	0.1	6.069249909	213.8	0.20	0.35	0.04	0.4	0.0	0.52
0.3	0.12	0.1	6.159950177	183.47	0.22	0.37	0.05	0.4	0.0	0.56
0.2	0.12	0.1	6.19277716	191.75	0.22	0.38	0.05	0.4	0.0	0.58
0.4	0.12	0.1	6.228049682	196.88	0.24	0.42	0.05	0.5	0.0	0.62
0.7	0.13	0.1	6.28717116	188.6	0.27	0.46	0.05	0.5	0.0	0.69
0.5	0.14	0.2	6.346160556	176	0.29	0.49	0.05	0.5	0.0	0.74
0.8	0.15	0.2	6.39922935	174.56	0.31	0.53	0.06	0.6	0.0	0.81
3.4	0.17	0.2	6.50090498	179.51	0.43	0.73	0.07	0.7	0.0	1.11
9.9	0.22	0.4	6.536960512	186.17	0.80	1.42	0.12	1.2	0.0	2.07
0.6	0.39	0.4	6.495727234	188.69	0.83	1.47	0.13	1.2	0.0	2.13
20.2	0.40	0.7	6.56063548	187.61	1.58	2.93	0.24	2.3	0.0	4.07
0.5	0.73	0.7	6.637789541	186.62	1.60	2.97	0.24	2.3	0.0	4.12
5.5	0.74	0.8	6.706024089	187.61	1.80	3.39	0.27	2.6	0.0	4.63
10.0	0.83	1.0	6.788730328	188.24	2.16	4.18	0.33	3.2	0.0	5.57
5.0	1.00	1.1	6.76372264	187.52	2.34	4.56	0.36	3.5	0.0	6.03
15.0	1.08	1.3	6.858727312	182.66	2.84	5.60	0.44	4.3	0.0	7.33
1.7	1.33	1.4	7	172.4	2.89	5.68	0.45	4.3	0.0	7.46
43.3	1.36	2.1	7	163.49	4.05	7.42	0.55	5.4	0.0	10.46
45.0	2.08	2.8	7	158.81	5.12	8.96	0.65	6.3	0.0	13.21
23.3	2.83	3.2	7	154.94	5.61	9.65	0.69	6.7	0.0	14.48
46.7	3.22	4.0	7	151.43	6.52	10.89	0.76	7.4	0.0	16.81
60.0	4.00	5.0	7	148.01	7.55	12.28	0.83	8.1	0.0	19.48
60.0	5.00	6.0	7	142.97	8.43	13.44	0.90	8.7	0.0	21.75
30.0	6.00	6.5	7	137.39	8.80	13.90	0.92	8.9	0.0	22.69
30.0	6.50	7.0	7	135.32	9.14	14.33	0.93	9.0	0.0	23.57
60.0	7.00	8.0	7	134.06	9.77	15.14	0.94	9.1	0.0	25.21
125.0	8.00	10.1	7	131.45	10.93	16.63	0.96	9.3	0.0	28.21
13795.0	10.08	240.0	7	126.9958726	56.38	148.70	2.65	25.7	0.0	145.46
28800.0	240.00	720.0	7	116.8554906	56.39	148.71	3.35	32.6	0.0	145.49

DEG, Nominal, Case 5

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	133.88	0.0031	0.0069	0.0015	0.015	0.000	0.008
0.3	0.08	0.1	6.258408169	201.92	0.00	0.01	0.00	0.0	0.0	0.01
0.1	0.09	0.1	6.300525949	255.47	0.00	0.01	0.01	0.0	0.0	0.01
0.5	0.09	0.1	6.362514192	252.5	0.00	0.02	0.02	0.1	0.0	0.01
1.0	0.10	0.1	6.4972256	213.8	0.01	0.04	0.03	0.1	0.0	0.02
0.3	0.12	0.1	6.604921709	183.47	0.01	0.04	0.03	0.1	0.0	0.02
0.2	0.12	0.1	6.643683644	191.75	0.01	0.04	0.03	0.1	0.0	0.02
0.4	0.12	0.1	6.685170505	196.88	0.01	0.04	0.03	0.1	0.0	0.02
0.7	0.13	0.1	6.754342015	188.6	0.01	0.05	0.04	0.2	0.0	0.02
0.5	0.14	0.2	6.822927461	176	0.01	0.05	0.04	0.2	0.0	0.02
0.8	0.15	0.2	6.883888546	174.56	0.01	0.06	0.04	0.2	0.0	0.03
3.4	0.17	0.2	6.995291855	179.51	0.01	0.08	0.05	0.3	0.1	0.03
9.9	0.22	0.4	7.002044536	186.17	0.03	0.17	0.09	0.5	0.1	0.07
0.6	0.39	0.4	6.923623212	188.69	0.03	0.17	0.10	0.5	0.1	0.07
20.2	0.40	0.7	7.000141242	187.61	0.05	0.35	0.19	1.1	0.2	0.13
0.5	0.73	0.7	7.093480609	186.62	0.05	0.35	0.19	1.1	0.2	0.13
5.5	0.74	0.8	7.184512553	187.61	0.06	0.41	0.22	1.3	0.2	0.15
10.0	0.83	1.0	7.304359296	188.24	0.07	0.51	0.27	1.6	0.2	0.18
5.0	1.00	1.1	7.2904359	187.52	0.08	0.55	0.30	1.7	0.3	0.20
15.0	1.08	1.3	7.269376604	182.66	0.09	0.59	0.36	1.8	0.4	0.24
1.7	1.33	1.4	7.3	172.4	0.10	0.59	0.36	1.8	0.4	0.25
43.3	1.36	2.1	7.3	163.49	0.14	0.65	0.46	2.0	0.6	0.35
45.0	2.08	2.8	7.3	158.81	0.18	0.71	0.54	2.2	0.7	0.46
23.3	2.83	3.2	7.3	154.94	0.20	0.74	0.57	2.3	0.7	0.51
46.7	3.22	4.0	7.3	151.43	0.24	0.78	0.63	2.4	0.9	0.61
60.0	4.00	5.0	7.3	148.01	0.29	0.84	0.70	2.6	1.0	0.74
60.0	5.00	6.0	7.3	142.97	0.33	0.89	0.76	2.8	1.1	0.86
30.0	6.00	6.5	7.3	137.39	0.35	0.91	0.78	2.8	1.1	0.91
30.0	6.50	7.0	7.3	135.32	0.38	0.93	0.78	2.9	1.1	0.97
60.0	7.00	8.0	7.3	134.06	0.42	0.96	0.79	3.0	1.1	1.07
125.0	8.00	10.1	7.3	131.45	0.50	1.03	0.80	3.2	1.0	1.29
13795.0	10.08	240.0	7.3	126.9958726	1.71	7.84	1.50	14.6	0.0	4.41
28800.0	240.00	720.0	7.3	116.8554906	1.72	15.88	2.41	23.5	0.0	4.43

DEG, Nominal, Case 6

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	133.88	0.0031	0.0069	0.0015	0.015	0.000	0.008
0.3	0.08	0.1	6.258408169	201.92	0.00	0.01	0.00	0.0	0.0	0.01
0.1	0.09	0.1	6.300525949	255.47	0.00	0.01	0.01	0.0	0.0	0.01
0.5	0.09	0.1	6.362514192	252.5	0.00	0.02	0.02	0.1	0.0	0.01
1.0	0.10	0.1	6.4972256	213.8	0.01	0.04	0.03	0.1	0.0	0.02
0.3	0.12	0.1	6.604921709	183.47	0.01	0.04	0.03	0.1	0.0	0.02
0.2	0.12	0.1	6.643683644	191.75	0.01	0.04	0.03	0.1	0.0	0.02
0.4	0.12	0.1	6.685170505	196.88	0.01	0.04	0.03	0.1	0.0	0.02
0.7	0.13	0.1	6.754342015	188.6	0.01	0.05	0.04	0.2	0.0	0.02
0.5	0.14	0.2	6.822927461	176	0.01	0.05	0.04	0.2	0.0	0.02
0.8	0.15	0.2	6.883888546	174.56	0.01	0.06	0.04	0.2	0.0	0.03
3.4	0.17	0.2	6.995291855	179.51	0.01	0.08	0.05	0.3	0.1	0.03
9.9	0.22	0.4	7.002044536	186.17	0.03	0.17	0.09	0.5	0.1	0.07
0.6	0.39	0.4	6.923623212	188.69	0.03	0.17	0.10	0.5	0.1	0.07
20.2	0.40	0.7	7.000141242	187.61	0.05	0.35	0.19	1.1	0.2	0.13
0.5	0.73	0.7	7.093480609	186.62	0.05	0.35	0.19	1.1	0.2	0.13
5.5	0.74	0.8	7.184512553	187.61	0.06	0.41	0.22	1.3	0.2	0.15
10.0	0.83	1.0	7.304359296	188.24	0.07	0.51	0.27	1.6	0.2	0.18
5.0	1.00	1.1	7.2904359	187.52	0.08	0.55	0.30	1.7	0.3	0.20
15.0	1.08	1.3	7.269376604	182.66	0.09	0.59	0.36	1.8	0.4	0.24
1.7	1.33	1.4	7.3	172.4	0.10	0.59	0.36	1.8	0.4	0.25
43.3	1.36	2.1	7.3	163.49	0.14	0.65	0.46	2.0	0.6	0.35
45.0	2.08	2.8	7.3	158.81	0.18	0.71	0.54	2.2	0.7	0.46
23.3	2.83	3.2	7.3	154.94	0.20	0.74	0.57	2.3	0.7	0.51
46.7	3.22	4.0	7.3	151.43	0.24	0.78	0.63	2.4	0.9	0.61
60.0	4.00	5.0	7.3	148.01	0.29	0.84	0.70	2.6	1.0	0.74
60.0	5.00	6.0	7.3	142.97	0.33	0.89	0.76	2.8	1.1	0.86
30.0	6.00	6.5	7.3	137.39	0.35	0.91	0.78	2.8	1.1	0.91
30.0	6.50	7.0	7.3	135.32	0.38	0.93	0.78	2.9	1.1	0.97
60.0	7.00	8.0	7.3	134.06	0.42	0.96	0.79	3.0	1.1	1.08
125.0	8.00	10.1	7.3	131.45	0.50	1.03	0.80	3.2	1.0	1.29
13795.0	10.08	240.0	7.3	126.9958726	1.71	7.85	1.50	14.6	0.0	4.41
28800.0	240.00	720.0	7.3	116.8554906	1.72	15.88	2.42	23.5	0.0	4.43

DEG, Nominal, Case 7

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	133.88	0.1038	0.0556	0.0020	0.020	0.000	0.268
0.3	0.08	0.1	6.258408169	201.92	0.12	0.08	0.00	0.0	0.0	0.30
0.1	0.09	0.1	6.300525949	255.47	0.12	0.11	0.01	0.1	0.0	0.32
0.5	0.09	0.1	6.362514192	252.5	0.16	0.27	0.04	0.3	0.0	0.41
1.0	0.10	0.1	6.4972256	213.8	0.21	0.40	0.05	0.5	0.0	0.53
0.3	0.12	0.1	6.604921709	183.47	0.22	0.43	0.05	0.5	0.0	0.57
0.2	0.12	0.1	6.643683644	191.75	0.23	0.44	0.05	0.5	0.0	0.59
0.4	0.12	0.1	6.685170505	196.88	0.25	0.48	0.06	0.5	0.0	0.63
0.7	0.13	0.1	6.754342015	188.6	0.27	0.54	0.06	0.6	0.0	0.70
0.5	0.14	0.2	6.822927461	176	0.29	0.57	0.06	0.6	0.0	0.75
0.8	0.15	0.2	6.883888546	174.56	0.32	0.62	0.06	0.6	0.0	0.82
3.4	0.17	0.2	6.995291855	179.51	0.44	0.86	0.08	0.8	0.0	1.14
9.9	0.22	0.4	7.002044536	186.17	0.82	1.68	0.14	1.4	0.0	2.12
0.6	0.39	0.4	6.923623212	188.69	0.85	1.74	0.15	1.4	0.0	2.18
20.2	0.40	0.7	7.000141242	187.61	1.61	3.46	0.28	2.7	0.0	4.17
0.5	0.73	0.7	7.093480609	186.62	1.63	3.51	0.28	2.8	0.0	4.22
5.5	0.74	0.8	7.184512553	187.61	1.84	4.00	0.32	3.1	0.0	4.74
10.0	0.83	1.0	7.304359296	188.24	2.21	4.96	0.40	3.9	0.0	5.69
5.0	1.00	1.1	7.2904359	187.52	2.39	5.42	0.44	4.2	0.0	6.16
15.0	1.08	1.3	7.269376604	182.66	2.89	6.53	0.53	5.1	0.0	7.47
1.7	1.33	1.4	7.3	172.4	2.94	6.63	0.53	5.2	0.0	7.59
43.3	1.36	2.1	7.3	163.49	4.10	8.53	0.66	6.4	0.0	10.57
45.0	2.08	2.8	7.3	158.81	5.14	10.20	0.76	7.4	0.0	13.25
23.3	2.83	3.2	7.3	154.94	5.61	10.95	0.81	7.9	0.0	14.47
46.7	3.22	4.0	7.3	151.43	6.47	12.28	0.89	8.7	0.0	16.70
60.0	4.00	5.0	7.3	148.01	7.45	13.76	0.98	9.5	0.0	19.22
60.0	5.00	6.0	7.3	142.97	8.26	14.97	1.05	10.2	0.0	21.31
30.0	6.00	6.5	7.3	137.39	8.59	15.45	1.08	10.5	0.0	22.16
30.0	6.50	7.0	7.3	135.32	8.89	15.89	1.08	10.5	0.0	22.94
60.0	7.00	8.0	7.3	134.06	9.46	16.71	1.09	10.6	0.0	24.40
125.0	8.00	10.1	7.3	131.45	10.46	18.22	1.11	10.8	0.0	27.00
13795.0	10.08	240.0	7.3	126.9958726	56.38	147.81	2.86	27.8	0.0	145.46
28800.0	240.00	720.0	7.3	116.8554906	56.39	147.82	3.70	35.9	0.0	145.49

DEG, Nominal, Case 8

Interval Duration (min)	Start of Interval (hrs)	End of Interval (hrs)	Average Interval pH	Average Temp (F)	Ca Release (kg)	Si Release (kg)	Al Release (kg)	$NaAlSi_3O_8$ Precipitate (kg)	AlOOH Precipitate (kg)	$Ca_3(PO_4)_2$ Precipitate (kg)
5.0	0.00	0.1	5.406773628	133.88	0.1038	0.0556	0.0020	0.020	0.000	0.268
0.3	0.08	0.1	6.258408169	201.92	0.12	0.08	0.00	0.0	0.0	0.30
0.1	0.09	0.1	6.300525949	255.47	0.12	0.11	0.01	0.1	0.0	0.32
0.5	0.09	0.1	6.362514192	252.5	0.16	0.27	0.04	0.3	0.0	0.41
1.0	0.10	0.1	6.4972256	213.8	0.21	0.40	0.05	0.5	0.0	0.54
0.3	0.12	0.1	6.604921709	183.47	0.22	0.43	0.05	0.5	0.0	0.57
0.2	0.12	0.1	6.643683644	191.75	0.23	0.44	0.05	0.5	0.0	0.59
0.4	0.12	0.1	6.685170505	196.88	0.25	0.48	0.06	0.5	0.0	0.63
0.7	0.13	0.1	6.754342015	188.6	0.27	0.54	0.06	0.6	0.0	0.71
0.5	0.14	0.2	6.822927461	176	0.29	0.57	0.06	0.6	0.0	0.75
0.8	0.15	0.2	6.883888546	174.56	0.32	0.62	0.06	0.6	0.0	0.82
3.4	0.17	0.2	6.995291855	179.51	0.44	0.86	0.08	0.8	0.0	1.14
9.9	0.22	0.4	7.002044536	186.17	0.82	1.68	0.14	1.4	0.0	2.13
0.6	0.39	0.4	6.923623212	188.69	0.85	1.74	0.15	1.4	0.0	2.19
20.2	0.40	0.7	7.000141242	187.61	1.62	3.46	0.28	2.7	0.0	4.19
0.5	0.73	0.7	7.093480609	186.62	1.64	3.51	0.28	2.8	0.0	4.24
5.5	0.74	0.8	7.184512553	187.61	1.85	4.01	0.32	3.1	0.0	4.77
10.0	0.83	1.0	7.304359296	188.24	2.22	4.97	0.40	3.9	0.0	5.74
5.0	1.00	1.1	7.2904359	187.52	2.41	5.43	0.44	4.2	0.0	6.21
15.0	1.08	1.3	7.269376604	182.66	2.93	6.56	0.53	5.1	0.0	7.55
1.7	1.33	1.4	7.3	172.4	2.98	6.66	0.53	5.2	0.0	7.68
43.3	1.36	2.1	7.3	163.49	4.17	8.58	0.66	6.4	0.0	10.75
45.0	2.08	2.8	7.3	158.81	5.26	10.29	0.77	7.5	0.0	13.57
23.3	2.83	3.2	7.3	154.94	5.76	11.06	0.81	7.9	0.0	14.86
46.7	3.22	4.0	7.3	151.43	6.69	12.43	0.89	8.7	0.0	17.26
60.0	4.00	5.0	7.3	148.01	7.76	13.97	0.98	9.6	0.0	20.01
60.0	5.00	6.0	7.3	142.97	8.66	15.24	1.05	10.2	0.0	22.35
30.0	6.00	6.5	7.3	137.39	9.04	15.75	1.08	10.5	0.0	23.33
30.0	6.50	7.0	7.3	135.32	9.40	16.22	1.09	10.6	0.0	24.24
60.0	7.00	8.0	7.3	134.06	10.06	17.10	1.10	10.7	0.0	25.95
125.0	8.00	10.1	7.3	131.45	11.27	18.73	1.12	10.9	0.0	29.08
13795.0	10.08	240.0	7.3	126.9958726	56.38	162.35	3.02	29.3	0.0	145.46
28800.0	240.00	720.0	7.3	116.8554906	56.39	162.35	3.86	37.5	0.0	145.49