APPENDIX I

MAGIC CALIBRATION INPUT DATA AND CALIBRATION RESULTS.

I.1 Introduction

The aggregated nature of the MAGIC model requires that it be calibrated to observed data from a system before it can be used to examine potential system response. Calibration is achieved by setting the values of certain parameters within the model that can be directly measured or observed in the system of interest (called "fixed" parameters). The model is then run (using observed and/or assumed atmospheric and hydrologic inputs) and the outputs (stream water and soil chemical variables, called "criterion" variables) are compared to observed values of these variables. If the observed and simulated values differ, the values of another set of parameters in the model (called "optimized" parameters) are adjusted to improve the fit. After a number of iterations, the simulated-minus-observed values of the criterion variables usually converge to zero (within some specified tolerance). The model is then considered calibrated. If new assumptions (or values) for any of the fixed variables or inputs to the model are subsequently adopted, the model must be re-calibrated by re-adjusting the optimized parameters until the simulated-minus-observed values of the criterion variables again fall within the specified tolerance.

I.2 Implementation of the MAGIC model for SAMI sites

As implemented in this project, the MAGIC model is a two-compartment representation of a catchment. Atmospheric deposition enters the soil compartment and the equilibrium equations are used to calculate soil water chemistry. The water is then routed to the stream compartment, and the appropriate equilibrium equations are reapplied to calculate streamwater chemistry.

Atmospheric deposition, soil physical and chemical characteristics, and net uptake-release fluxes for the base cations and strong acid anions are required as inputs to the model. These inputs are generally assumed to be uniform over the catchment. Atmospheric fluxes are calculated from concentrations of the ions in precipitation and the rainfall volume into the catchment. The atmospheric fluxes of the ions must be corrected for dry deposition of gas, particulates and aerosols and for inputs in cloud/fog water. The volume streamflow of the catchment must also be provided to the model. In general, the model is implemented using average hydrologic conditions and meteorological conditions in annual or seasonal simulations, i.e., mean annual or mean monthly deposition, precipitation and streamflow are used to drive the model. The model is not designed to provide temporal resolution greater than monthly. Values for soil and streamwater temperature, partial pressure of carbon dioxide in the soil and streamwater and organic acid concentrations in soilwater and streamwater must also be provided.

Once initial conditions (initial values of variables in the equilibrium equations) have been established, the equilibrium equations are solved for soil water and streamwater concentrations of the remaining variables. These concentrations are used to calculate the streamwater output fluxes of the model for the first time step. The mass balance equations are (numerically) integrated over the time step, providing new values for the total amounts of base cations and strong acid anions in the system. These in turn are used to calculate new values of the remaining variables, new streamwater fluxes, and so forth. The output from MAGIC is thus a time trace for

all major chemical constituents for the period of time chosen for the integration. Details of the equations in the model are given in Appendix H.

I.3 Calibration Input Data

The calibration procedure requires that stream water quality data, atmospheric deposition data, and soils data are available for each SAMI stream. The availability of the required data varied from site to site in this study. Appendix B reports on the data acquisition activities for the project. The body of the report describes the selection procedure by which sites were chosen for analysis, and summarizes the water quality characteristics of the sites. For the selected sites, derivation of the atmospheric deposition at each site for the SAMI Reference Year is described in Appendix L. The procedure for assigning soils data to those sites for which no soils observations were available is described in the body of the report. This appendix tabulates and summarizes the input data used to calibrate MAGIC for each SAMI site, and documents the ggodness-of-fit of the calibration for each site.

This appendix contains tables of model inputs and outputs for each site in the SAMI analysis. In these tables, each site is identified by a unique ID number assigned for the SAMI project. Table I-1 gives this same SAMI ID number along with the full name, location, and SAMI landscape classification group (bin number) for each site as a reference aid.

I.3.1 Deposition Data for the Calibration Year

Atmospheric deposition to each SAMI site is needed for calibration and application of MAGIC. The model requires input fluxes of the base cations, sulfate, nitrate and ammonia. The fluxes must be total atmospheric deposition.

The years for which observed streamwater chemistry was available determined the years for which the SAMI sites could be calibrated. The timing of available observed data ranged from the years 1985 to 2000. The SAMI reference year for deposition is 1995. The deposition used for sites that were calibrated in years other than 1995 had, therefore, to be estimated using the time-series scaling procedures described in Appendix L.

The calibration procedure for MAGIC at each site assumed that chloride mass balance occurs at each site. That is, that the atmospheric inputs and stream outputs of Cl are equal. To achieve this assumption during calibration, the Cl deposition interpolated from the SAMI Reference Year was increased to provide a balance with stream outputs of Cl at each site (if necessary). The additional Cl deposition was accompanied by additional deposition of base cations (in sea salt ratio) to conserve charge balance. The added deposition was thus in the form of neutral salt and was neither acidifying nor alkalizing with respect to catchment processes. The added deposition was achieved by adjusting the dry deposition factors (DDF's) for the base cations and Cl. The DDF's for SO_4, NO_3, and NH_4 were not adjusted and remained as described in Appendix L.

The total deposition values (calculated from wet deposition and DDF) used for the calibration year at each site are tabulated and summarized in Table I-2.

I.3.2 Past Deposition Patterns

Given total deposition for the calibration year at each site, the calibration required a temporal sequence of how that deposition has varied historically for the period over which anthropogenic deposition to the site has been occurring. That is, the total historical loading to a site and the temporal pattern of that loading must be provided to the model. The MAGIC model is sensitive to assumptions about past deposition. The pattern of the past deposition determines the total loading of acidic deposition that the site has received, and thus affects how the model simulates responses to future changes in loading. The temporal sequences used for past deposition are described in Appendix L.

I.3.3 Soils and Watershed Data

The model requires data describing a number of physical and chemical characteristics at each site. For some sites, soils data were directly available. In general, soils data that were stratified by depth or horizon were vertically aggregated using a bulk-density weighted scheme to provide a single value for each soil parameter at a site. If more than one soil sampling site were available for a site, the vertically aggregated data were further averaged horizontally (using a weighting procedure based on relative areas of bedrock or vegetation, if possible). For sites where soils data were not available, the soils parameters were interpolated from sites having soils data using the scheme described in the body of the text.

The soil parameter values and watershed characteristics used for calibration at each site are tabulated and summarized in Table I-3. The observed soil variable values used as targets for calibration at each site are tabulated and summarized in Table I-7.

I.3.4 Stream Water Quality Data

The calibration procedure requires that observed stream water quality data be available as targets for the calibration procedure. All sites in the SAMI analysis (by definition) had appropriate data available. There were however, differences among sites in the quantity of data available. Some sites had only a single survey value, while other sites had partial or multiple years of monitoring data. If less than one year of data were available, the observations were volume-weighted to provide an estimate of water quality for that year. If data were available for multiple years, an appropriate time span (2-3 years) of the data were volume-weighted to provide a single annual average value for calibration.

The observed stream water values used as targets for calibration at each site are tabulated and summarized in Table I-4.

I.4 Calibration Results

All sites included in this project were successfully calibrated. The simulated values for each site in the calibration year are summarized in Table I-5 for stream variables and Table I-8 for soil variables. Good fits were obtained for the model applied to each of the study sites as measured by the magnitude of the simulated minus observed values for both stream water and soil variables (Tables I-6 and I-9). Errors between simulated and observed annual volume-weighted average concentrations were all less than 3 ueq/L for the calibration period. Simulation of soil variables was equally good with errors between simulated and observed exchangeable cation concentrations all less than 0.2%.

The calibrated values of the "optimized" soil parameters at each site are presented in Table I-10. Plots of simulated versus observed values for all ions and sites are presented in Figures I-1 and I-2.

Table I-1. Names, locations, and ID's of SAMI sites. The SAMI ID is a unique identifier assigned to each site. This ID is used in other tables in this appendix without the name and location data. Elevations are in meters. The "Bin Number" identifies the landscape classification unit to which each site belongs (all sites used in the regional analysis have a non-zero bin number, special interest sites have bin number zero). The table is arranged alphabetically alphabetically in ascending order by SAMI ID. The number of sites is 164.

Stream Name	Site ID	Latitude	Longitude	Elev (m)	State	Bin No.	SiteType
Grasses Creek-Dry Branch	2A068015U	36.701	81.622	1048	VA	7	regional
Sugar Cove Branch of N. River	2A07701	35.320	84.100	610	TN	4	regional
Cosby Creek	2A07805	35.790	83.240	436	TN	4	regional
Roaring Fork	2A07806	35.820	82.890	670	NC	4	regional
Little River	2A07810L	35.670	83.677	433	TN	0	special
Little River	2A07810U	35.628	83.541	811	TN	0	special
False Gap Prong	2A07811	35.700	83.380	549	TN	3	regional
Correll Branch	2A07812	35.680	83.090	884	NC	4	regional
Eagle Creek	2A07816	35.500	83.760	579	NC	4	regional
Forney Creek	2A07817	35.510	83.560	732	NC	3	regional
Grassy Creek	2A07821	35.460	82.280	552	NC	4	regional
Brush Creek	2A07823	35.320	83.520	549	NC	4	regional
Whiteoak Creek	2A07828	35.230	83.620	960	NC	4	regional
Catheys Creek	2A07829	35.210	82.790	689	NC	4	regional
Brush Creek	2A07834	35.110	83.260	838	NC	4	regional
Middle Saluda River	2A07835	35.120	82.540	329	SC	4	regional
Little Branch Creek	2A07882	35.450	83.060	936	NC	4	regional
Dunn Mill Creek	2A08802	34.950	84.440	506	GA	4	regional
Bear Creek	2A08804	34.820	84.570	567	GA	4	regional
Weaver Creek	2A08805	34.870	84.300	488	GA	4	regional
Bryant Creek	2A08810	34.610	84.000	448	GA	4	regional
Persimmon Creek	2A08901	34.910	83.500	596	GA	4	regional
Sprigs Hollow	2B041020L	39.562	78.424	168	WV	8	regional
No Name	2B041049U	39.110	78.441	378	VA	5	regional
Elk Run	2B047032	38.632	79.586	823	WV	8	regional
Straight Fork	2B047044U	38.498	79.611	899	VA	8	regional
Lower Lewis Run	2B047076L	38.305	78.746	354	VA	0	special
Lower Lewis Run	2B047076U	38.285	78.719	543	VA	6	regional
Whites Run	2B058015U	37.780	79.291	500	VA	2	regional
No Name	2C041033U	39.363	79.735	671	WV	10	regional
Buffalo Creek	2C041039	39.261	79.755	576	WV	12	regional
Thunderstruck Creek	2C041040	39.249	79.601	658	WV	11	regional
No Name	2C041043U	39.238	79.167	671	WV	12	regional
Right Fork Clover Run	2C041045	39.148	79.715	485	WV	12	regional
Coal Run	2C041051	39.040	79.616	558	WV	9	regional
Right Fork Holly River	2C046013L	38.569	80.418	448	WV	12	regional
Johnson Run	2C046033	38.347	80.408	704	WV	9	regional
Hateful Run	2C046034	38.351	80.259	879	WV	9	regional
North Fork Cherry River	2C046043L	38.231	80.416	937	WV	10	regional

Table I-1. Continued.

Stream Name	Site ID	Latitude	Longitude	Elev (m)	State	Bin No.	SiteType
North Fork Cherry River	2C046043U	38.233	80.407	954	WV	0	special
Hedricks Creek	2C046050	38.125	80.982	603	WV	12	regional
Laurel Creek	2C046053L	38.129	80.553	823	WV	11	regional
Little Clear Creek	2C046062L	37.998	80.569	866	WV	12	regional
Crawford Run	2C047007	38.759	79.923	607	WV	12	regional
Clubhouse Run	2C047010L	38.632	79.760	920	WV	10	regional
Clubhouse Run	2C047010U	38.630	79.745	969	WV	11	regional
Butler Branch	2C057004	37.956	80.943	721	WV	10	regional
Johnson Mill Branch	2C066026L	36.247	85.038	488	TN	11	regional
No Name	2C066027L	36.270	84.865	454	TN	11	regional
No Name	2C066027U	36.245	84.872	489	TN	9	regional
Wallace Branch	2C066039L	36.002	85.005	527	TN	12	regional
Glady Fork	2C077022U	35.525	85.475	555	TN	11	regional
1306	BJ35	36.118	82.084	1420	TN	2	regional
M_S3_N2_2	BJ72	35.331	82.672	1717	NC	2	regional
CDB	BJ76	35.358	83.383	971	NC	0	special
BEFPR	BJ77	35.368	82.935	971	NC	0	special
Belfast Creek	BLFC	37.580	79.467	317	VA	0	special
Un-named Eastern Trib	CO01	34.876	84.600	707	GA	3	regional
Hickory Creek	CO05	34.940	84.648	390	GA	3	regional
Bear Brook	CO06	34.921	84.532	427	GA	4	regional
Beech Creek	CO10	34.979	84.566	472	GA	3	regional
Deep Run	DR	38.266	78.743	415	VA	0	special
Deep Run	DR01	38.266	78.743	415	VA	6	regional
Little Stonecoal Run	DS04	38.991	79.396	932	WV	9	regional
Stonecoal Run (Left Branch)	DS06	39.002	79.388	1127	WV	0	special
Stonecoal Run (Right Branch)	DS09	39.007	79.383	1115	WV	9	regional
Fisher Spring Run	DS19	39.002	79.360	1011	WV	0	special
Unnamed	DS50	39.026	79.363	1097	WV	0	special
Fernow - WS10	FN1	39.064	79.681	713	WV	0	special
Fernow - WS13	FN2	39.063	79.679	695	WV	0	special
Fernow - WS4	FN3	39.056	79.688	744	WV	9	regional
Gsmnp Noland Creek - NE Fork	GS01	35.565	83.480	1740	NC	2	regional
Gsmnp Noland Creek - NW Fork	GS02	35.564	83.480	1800	NC	2	regional
GSMNP Deep Creek	GS04	35.608	83.442	1600	NC	4	regional
GSMNP Jay Bird Branch	GS05	35.680	83.597	1248	TN	3	regional
GSMNP Leconte Creek	GS06	35.687	83.503	570	TN	4	regional
GSMNP Raven Fork	GS07	35.610	83.254	1800	NC	3	regional
GSMNP Enloe Creek	GS08	35.614	83.270	1500	NC	3	regional
Laurel Branch Downstream	LB01	35.339	84.083	900	TN	4	regional
Lewis Fork	LEWF	36.671	81.525	1103	VA	0	special
Sulphur Spring Creek	M037	37.577	79.438	427	VA	3	regional
Big Hellcat Creek	M038	37.611	79.451	317	VA	0	special
Little Hellgate Creek	M039	37.603	79.465	317	VA	0	special

Table I-1. Continued.

Stream Name	Site ID	Latitude	Longitude	Elev (m)	State	Bin No.	SiteType
North Fork of Dry Run	NFD	38.623	78.355	488	VA	0	special
North Fork of Dry Run	NFDR	38.623	78.355	488	VA	4	regional
Condon Run	OC02	38.942	79.670	923	WV	9	regional
Yellow Creek	OC05	38.953	79.664	911	WV	0	special
Unnamed	OC08	38.980	79.639	871	WV	0	special
Devils Gulch	OC09	38.983	79.643	853	WV	9	regional
Possession Camp Run	OC31	39.000	79.645	798	WV	0	special
Moores Run	OC32	39.000	79.646	798	WV	0	special
Coal Run	OC35	39.033	79.620	688	WV	0	special
Otter Creek (Upper)	OC79	38.938	79.660	950	WV	10	regional
Paine Run	PAIN	38.201	78.769	424	VA	0	special
Un-named Trib Between 8 and 9	SP10	34.298	87.429	186	AL	0	special
Un-named Trib above 38	SP39	34.369	87.438	250	AL	11	regional
Quillan Creek	SP41	34.317	87.481	183	AL	0	special
Staunton River	STAN	38.457	78.399	308	VA	0	special
Noname Trib Stony Cr.	VA524S	37.423	80.630	914	VA	6	regional
Bearpen Branch	VA526S	37.201	82.486	463	VA	12	regional
Ragged Run	VA531S	38.537	78.306	505	VA	0	special
Noname Trib Gap Cr	VA548S	38.699	78.596	445	VA	7	regional
Little Mill Cr	VA555S	38.080	79.499	694	VA	7	regional
Little Walker Cr	VA821S	37.148	80.823	591	VA	8	regional
Lewis Fork	VT02	36.671	81.525	1103	VA	3	regional
Raccoon Branch	VT05	36.739	81.449	835	VA	4	regional
Cove Branch	VT07	37.072	81.433	930	VA	6	regional
Roaring Fork-upper	VT08	37.064	81.418	930	VA	7	regional
Roaring Fork-lower	VT09	37.055	81.458	664	VA	6	regional
Laurel Run	VT10	38.176	79.679	725	VA	7	regional
Mare Run	VT11	38.013	79.786	619	VA	7	regional
Panther Run	VT12	38.007	79.775	619	VA	8	regional
Porters Creek	VT15	37.979	79.787	604	VA	7	regional
Bearwallow Run	VT18	38.547	79.655	957	VA	8	regional
Lost Run	VT19	38.549	79.644	957	VA	8	regional
Hipes Branch	VT20	37.679	79.941	335	VA	8	regional
Shawvers Run	VT24	37.600	80.175	567	VA	7	regional
Cove Branch	VT25	37.584	80.161	561	VA	6	regional
Pine Swamp Branch	VT26	37.430	80.613	725	VA	5	regional
NF Stony Creek	VT28	37.460	80.546	835	VA	6	regional
War Spur Branch	VT29	37.395	80.493	707	VA	6	regional
Nobusiness Creek	VT31	37.255	80.875	735	VA	5	regional
Laurel Creek	VT32	37.378	80.603	942	VA	6	regional
Laurel Run	VT34	37.916	79.472	387	VA	7	regional
Paine Run	VT35	38.201	78.769	424	VA	6	regional
Meadow Run	VT36	38.170	78.785	451	VA	1	regional
North River	VT37	38.421	79.266	811	VA	7	regional

Table I-1. Continued.

Stream Name	Site ID	Latitude	Longitude	Elev (m)	State	Bin No.	SiteType
Ramseys Draft	VT38	38.346	79.332	707	VA	8	regional
Kennedy Creek	VT39	37.946	79.034	561	VA	1	regional
St Marys R-lower	VT41	37.928	79.092	530	VA	0	special
Little Cove Creek	VT46	37.738	79.211	506	VA	4	regional
Big Mack Creek	VT48	36.946	80.635	658	VA	4	regional
Little Stony Creek	VT49	38.958	78.627	466	VA	6	regional
Laurel Run	VT50	38.918	78.729	524	VA	5	regional
Two Mile Run	VT53	38.319	78.655	372	VA	2	regional
German River-upper	VT54	38.674	79.078	762	VA	8	regional
Beech Lick Run	VT55	38.703	79.023	646	VA	8	regional
Wolf Run	VT56	38.438	79.169	594	VA	6	regional
Black Run-lower	VT57	38.512	79.110	524	VA	7	regional
Brokenback Run	VT58	38.570	78.330	329	VA	0	special
Staunton River	VT59	38.457	78.399	308	VA	4	regional
Hazel Run	VT62	38.624	78.293	329	VA	0	special
Rose River	VT66	38.522	78.402	341	VA	0	special
St Marys R-upper	VT68	37.935	79.060	725	VA	1	regional
Bear Branch (SMR)	VT70	37.922	79.078	677	VA	2	regional
Hogback Br (SMR)	VT72	37.945	79.096	689	VA	5	regional
Sugartree Br (SMR)	VT73	37.912	79.111	628	VA	3	regional
St Marys R-middle	VT74	37.932	79.083	579	VA	2	regional
White Oak Canyon R	VT75	38.567	78.365	354	VA	0	special
Belfast Creek	VT76	37.578	79.476	317	VA	2	regional
Matts Creek	VT77	37.588	79.433	256	VA	0	special
Little Tumbling Creek	VT78	36.957	81.738	799	VA	5	regional
White Oak Run	WOR	38.234	78.742	451	VA	0	special
White Oak Run	WOR1	38.234	78.742	451	VA	7	regional
Noname Trib Stony	WV523S	39.152	79.323	1170	WV	9	regional
Otter Cr	WV531S	39.011	79.646	847	WV	10	regional
Gauley	WV547S	38.399	80.493	650	WV	12	regional
Noname Trib South Fork Cherry R.	WV548S	38.214	80.479	768	WV	9	regional
Nnt Laurel Run	WV769S	38.879	79.956	719	WV	11	regional
Moss Run	WV770S	38.715	79.961	621	WV	12	regional
Left Fork Clover Run	WV771S	39.163	79.713	469	WV	12	regional
Nnt Glade Cr	WV785S	37.714	81.047	847	WV	9	regional
White Oak Fork	WV788S	38.357	80.383	857	WV	10	regional
Red Cr	WV796S	39.039	79.337	1127	WV	11	regional

Table I-2. The total deposition of all ions in the calibration year for each SAMI site. Deposition fluxes are in meq/m^2/yr (the model units). The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk
	Average	8.0	2.5	6.5	1.1	29.5	94.1	11.9	48.8	47.6	154.8	-107.2
	Std. Dev.	2.1	0.6	3.1	0.3	10.2	32.5	4.4	17.3	12.9	50.1	39.3
	Maximum	14.5	4.9	16.2	2.3	90.9	273.2	26.9	145.2	116.9	434.4	-53.6
	Minimum	4.2	1.4	2.7	0.6	19.2	51.9	4.7	25.7	30.9	92.2	-317.5
Site ID	**Calibration Year**	**Ca**	**Mg**	**Na**	**K**	**NH_4**	**SO_4**	**Cl**	**NO_3**	**SBC**	**SAA**	**Calk**
2A068015U	1985	7.3	2.1	5.0	1.1	25.6	75.5	9.6	39.8	41.1	124.9	-83.8
2A07701	1985	7.6	2.6	7.6	1.2	25.3	78.4	13.8	37.7	44.3	129.9	-85.6
2A07805	1985	5.7	1.7	4.6	0.8	19.6	61.8	8.5	31.0	32.5	101.3	-68.8
2A07806	1985	6.6	2.1	6.3	1.0	24.8	74.9	11.0	38.2	40.8	124.1	-83.3
2A07810L	1985	6.3	1.7	4.5	1.0	21.6	66.7	8.5	34.3	35.0	109.5	-74.5
2A07810U	1985	7.0	2.0	5.0	1.1	25.3	79.4	9.4	40.2	40.4	129.0	-88.6
2A07811	1985	5.4	1.5	4.1	0.8	19.2	60.0	7.6	30.1	31.0	97.8	-66.8
2A07812	1985	8.6	2.7	7.8	1.3	32.1	97.9	13.9	50.2	52.6	162.0	-109.4
2A07816	1985	8.4	2.5	7.1	1.4	28.1	87.7	13.1	43.8	47.5	144.6	-97.2
2A07817	1985	8.5	2.6	7.1	1.4	30.0	92.6	13.0	46.8	49.6	152.3	-102.8
2A07821	1985	5.0	2.1	7.6	1.0	21.6	60.3	11.9	29.9	37.3	102.1	-64.8
2A07823	1985	6.6	2.4	7.5	1.2	22.9	67.4	12.8	35.2	40.6	115.4	-74.8
2A07828	1985	8.0	3.1	10.0	1.5	27.5	81.0	16.7	41.8	50.1	139.5	-89.5
2A07829	1985	7.9	3.5	12.3	1.6	31.3	89.8	19.2	45.7	56.5	154.8	-98.2
2A07834	1985	6.2	2.8	9.9	1.2	21.7	61.8	15.4	32.0	41.7	109.2	-67.5
2A07835	1985	6.1	2.8	10.0	1.3	25.0	70.3	15.5	35.5	45.2	121.3	-76.2
2A07882	1985	7.8	2.9	9.3	1.4	29.7	87.3	15.5	45.2	51.2	148.1	-96.9
2A08802	1985	10.4	4.1	13.5	1.9	37.6	106.2	22.8	52.4	67.4	181.3	-113.9
2A08804	1985	11.9	4.9	16.2	2.3	44.3	120.3	26.9	59.2	79.4	206.4	-127.0
2A08805	1985	8.7	3.6	11.9	1.7	31.9	89.1	19.8	44.4	57.9	153.3	-95.5
2A08810	1985	9.7	4.5	15.7	2.2	36.4	98.5	24.8	49.7	68.4	172.9	-104.6
2A08901	1985	8.0	3.7	13.5	1.7	27.5	78.0	20.9	39.9	54.4	138.8	-84.4
2B041020L	1985	7.3	2.3	4.2	1.0	28.1	82.2	10.8	42.9	42.9	135.9	-93.0
2B041049U	1985	5.8	2.0	4.8	0.8	22.9	64.6	9.8	33.2	36.2	107.6	-71.4
2B047032	1985	9.5	2.3	4.5	0.9	26.8	94.3	10.8	49.9	43.9	155.0	-111.1
2B047044U	1985	8.8	2.3	4.6	0.9	26.3	91.5	10.5	48.4	42.9	150.4	-107.5
2B047076L	1985	6.0	2.5	7.9	0.8	25.2	73.3	13.2	37.6	42.6	124.2	-81.6
2B047076U	1985	7.0	3.1	10.1	1.0	29.2	84.5	16.4	43.5	50.4	144.4	-94.0
2B058015U	1985	7.4	2.8	7.6	1.1	27.2	85.0	13.8	45.0	46.2	143.8	-97.6
2C041033U	1985	13.5	2.9	4.1	1.3	35.4	136.4	12.7	70.3	57.2	219.4	-162.2
2C041039	1985	12.6	2.6	3.6	1.1	31.4	122.2	11.4	63.2	51.3	196.7	-145.5
2C041040	1985	11.9	2.5	3.6	1.1	30.3	115.8	11.0	60.3	49.4	187.1	-137.7
2C041043U	1985	8.6	2.2	3.6	1.0	26.8	91.1	9.8	47.3	42.2	148.2	-106.0
2C041045	1985	11.4	2.2	3.2	0.9	27.7	108.6	9.7	56.4	45.4	174.7	-129.2
2C041051	1985	12.7	2.5	3.8	1.0	31.6	120.4	11.0	63.3	51.6	194.7	-143.1
2C046013L	1985	9.7	2.2	3.8	0.9	27.2	101.6	9.7	54.4	43.8	165.7	-121.8
2C046033	1985	9.4	2.2	4.1	1.0	26.8	96.9	10.1	52.6	43.4	159.6	-116.2
2C046034	1985	10.4	2.5	4.6	1.1	29.9	107.7	11.4	57.9	48.6	177.0	-128.5
2C046043L	1985	9.2	2.2	4.2	1.0	27.2	97.1	10.0	52.9	43.8	160.0	-116.2
2C046043U	1985	9.1	2.2	4.1	1.0	26.9	96.1	9.9	52.3	43.3	158.3	-115.0

Table I-2. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk
2C046050	1985	7.3	1.8	3.3	0.8	21.9	75.5	8.0	42.7	35.0	126.3	-91.3
2C046053L	1985	8.1	2.0	3.7	0.9	24.3	85.5	8.9	47.0	39.0	141.4	-102.4
2C046062L	1985	7.8	2.0	3.8	0.9	23.7	81.7	8.8	45.3	38.2	135.8	-97.5
2C047007	1985	10.4	2.2	3.7	0.9	27.1	101.8	10.0	53.6	44.4	165.3	-121.0
2C047010L	1985	10.4	2.4	4.4	1.0	29.1	105.3	10.9	55.9	47.3	172.1	-124.8
2C047010U	1985	10.5	2.4	4.5	1.0	29.4	106.3	11.1	56.4	47.9	173.8	-126.0
2C057004	1985	6.9	1.7	3.3	0.8	21.4	72.3	7.9	41.4	34.2	121.6	-87.4
2C066026L	1985	11.5	3.4	8.6	1.4	36.0	128.8	17.6	54.1	60.8	200.6	-139.7
2C066027L	1985	11.5	3.4	8.3	1.4	35.3	129.8	17.5	54.4	59.8	201.7	-141.9
2C066027U	1985	11.6	3.4	8.4	1.4	35.6	131.3	17.8	54.9	60.5	203.9	-143.4
2C066039L	1985	11.7	3.6	9.5	1.5	37.1	133.0	19.0	55.1	63.3	207.1	-143.9
2C077022U	1985	11.3	3.8	11.6	1.6	40.3	112.4	20.9	54.0	68.6	187.4	-118.7
BJ35	1999	5.5	1.9	5.7	0.8	26.3	77.5	8.7	38.5	40.2	124.7	-84.5
BJ72	1999	5.8	2.5	8.6	1.1	28.9	84.1	12.5	42.1	46.9	138.7	-91.8
BJ76	1999	5.8	2.1	6.5	1.0	25.9	76.6	10.0	39.8	41.3	126.3	-85.1
BJ77	1999	5.5	2.2	7.2	1.0	26.3	76.4	10.7	38.9	42.2	126.1	-83.9
BLFC	1991	6.4	2.4	6.1	1.0	26.0	79.5	10.6	42.0	41.9	132.1	-90.2
CO01	1993	9.6	3.8	12.3	1.8	36.0	98.9	20.8	48.5	63.6	168.2	-104.7
CO05	1993	7.6	2.9	9.5	1.4	28.0	77.2	16.2	37.8	49.5	131.3	-81.8
CO06	1993	11.6	4.6	15.1	2.1	42.4	118.8	25.5	58.3	75.8	202.6	-126.8
CO10	1993	8.4	3.2	10.5	1.5	30.7	85.1	17.9	41.9	54.3	144.8	-90.6
DR	1994	6.9	3.0	9.6	1.0	26.9	78.6	16.0	40.7	47.3	135.3	-88.0
DR01	1990	5.9	2.6	8.2	0.8	26.9	78.6	13.0	40.7	44.4	132.4	-88.0
DS04	1994	7.2	1.6	2.9	0.6	30.0	106.2	4.9	56.8	42.3	167.9	-125.6
DS06	1994	7.2	1.6	2.9	0.6	30.0	106.2	4.9	56.8	42.3	167.9	-125.6
DS09	1994	7.2	1.6	2.9	0.6	30.0	106.2	4.9	56.8	42.3	167.9	-125.6
DS19	1994	7.2	1.6	2.9	0.6	30.0	106.2	4.9	56.8	42.3	167.9	-125.6
DS50	1994	7.2	1.6	2.9	0.6	30.0	106.2	4.9	56.8	42.3	167.9	-125.6
FN1	1994	11.3	2.2	3.2	0.8	34.8	135.7	7.3	70.9	52.3	213.9	-161.5
FN2	1994	11.0	2.1	3.2	0.8	33.8	132.0	7.2	69.0	50.9	208.1	-157.2
FN3	1994	11.3	2.2	3.3	0.9	34.8	136.0	7.4	71.0	52.5	214.4	-162.0
GS01	2000	11.4	3.4	9.1	2.0	90.9	273.2	16.1	145.2	116.9	434.4	-317.5
GS02	2000	11.4	3.4	9.2	2.0	90.9	273.1	16.1	145.1	116.9	434.3	-317.4
GS04	2000	9.6	2.8	7.4	1.6	77.3	232.0	13.1	123.2	98.7	368.3	-269.6
GS05	2000	7.4	2.0	5.1	1.2	56.8	165.8	9.2	91.2	72.5	266.2	-193.7
GS06	2000	5.1	1.4	3.6	0.8	19.9	61.8	6.5	31.5	30.9	99.8	-68.9
GS07	2000	7.5	2.3	6.6	1.2	62.1	182.0	11.1	96.3	79.7	289.5	-209.8
GS08	2000	8.4	2.6	7.3	1.4	69.2	204.7	12.4	108.1	88.9	325.2	-236.3
LB01	1987	7.4	2.5	7.4	1.2	28.1	87.6	12.8	42.1	46.6	142.5	-95.9
LEWF	1991	7.2	2.2	5.2	1.2	26.6	81.1	9.4	40.6	42.3	131.1	-88.8
M037	1991	6.4	2.4	6.1	1.0	26.0	79.5	10.6	42.0	41.9	132.1	-90.2
M038	1991	6.4	2.4	6.1	1.0	26.0	79.5	10.6	42.0	41.9	132.1	-90.2
M039	1991	6.4	2.4	6.1	1.0	26.0	79.5	10.6	42.0	41.9	132.1	-90.2
NFD	1994	7.0	3.4	12.8	1.1	29.7	74.7	19.1	37.2	53.9	131.0	-77.1
NFDR	1990	5.9	2.9	10.9	0.9	29.7	74.7	15.5	37.2	50.3	127.4	-77.1
OC02	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
OC05	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6

Table I-2. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk
OC08	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
OC09	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
OC31	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
OC32	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
OC35	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
OC79	1994	8.4	1.7	2.7	0.7	31.2	118.2	4.7	62.2	44.6	185.2	-140.6
PAIN	1994	7.1	3.2	10.1	1.0	27.1	81.2	16.8	42.6	48.4	140.6	-92.1
SP10	1992	9.7	3.9	14.1	1.5	33.1	77.8	22.0	40.6	62.3	140.4	-78.1
SP39	1992	9.9	3.9	14.2	1.5	34.0	80.2	22.2	41.7	63.6	144.2	-80.6
SP41	1993	9.9	3.9	14.3	1.5	33.6	78.6	22.3	41.3	63.2	142.3	-79.0
STAN	1994	5.2	2.9	11.7	0.8	23.3	59.4	16.5	29.5	43.9	105.3	-61.4
VA524S	1994	8.6	2.3	4.3	1.7	23.2	76.8	9.9	39.4	40.0	126.0	-86.0
VA526S	1994	9.1	2.0	3.9	0.9	21.7	73.7	8.9	40.1	37.5	122.7	-85.2
VA531S	1994	4.9	2.5	9.8	0.8	20.6	51.9	14.5	25.7	38.6	92.2	-53.6
VA548S	1994	6.3	2.5	7.6	0.9	23.9	64.0	13.4	32.3	41.2	109.6	-68.4
VA555S	1994	8.3	2.7	6.4	1.1	25.6	83.7	13.2	44.7	44.0	141.6	-97.6
VA821S	1994	7.7	2.1	4.4	1.5	21.7	68.6	9.7	35.1	37.4	113.3	-75.9
VT02	1990	7.2	2.2	5.2	1.2	26.6	81.1	9.4	40.6	42.3	131.1	-88.8
VT05	1990	6.3	1.9	4.5	1.0	24.0	69.3	8.2	37.1	37.7	114.6	-76.8
VT07	1990	7.6	2.0	4.3	1.1	25.8	83.0	8.3	42.2	40.8	133.5	-92.8
VT08	1990	7.2	1.9	4.1	1.1	24.5	79.1	8.0	40.4	39.0	127.5	-88.5
VT09	1990	7.4	2.0	4.2	1.1	25.3	82.1	8.2	41.6	40.0	131.8	-91.8
VT10	1990	7.3	2.1	4.7	0.9	25.8	86.6	9.5	46.6	40.8	142.7	-101.9
VT11	1990	7.8	2.3	5.2	1.0	27.6	91.1	10.3	49.5	44.0	150.9	-106.9
VT12	1990	7.4	2.2	5.0	1.0	26.1	86.0	9.9	46.7	41.7	142.6	-100.9
VT15	1990	6.8	2.1	4.6	0.9	24.2	79.6	9.1	43.2	38.7	131.9	-93.3
VT18	1990	9.1	2.3	4.5	0.9	28.6	100.4	10.0	53.7	45.4	164.0	-118.6
VT19	1990	9.3	2.3	4.7	0.9	29.3	102.8	10.3	54.9	46.5	168.0	-121.4
VT20	1990	6.4	2.0	4.5	1.0	22.5	72.1	8.7	38.8	36.4	119.6	-83.1
VT24	1990	6.7	1.9	4.1	1.1	22.9	74.6	8.2	39.6	36.8	122.4	-85.6
VT25	1990	6.9	2.0	4.3	1.2	23.2	75.9	8.5	40.1	37.6	124.5	-86.9
VT26	1990	7.4	2.0	3.7	1.4	23.3	77.1	7.6	39.6	37.8	124.3	-86.5
VT28	1990	7.2	1.9	3.7	1.4	22.9	75.4	7.5	39.1	37.1	121.9	-84.9
VT29	1990	7.8	2.1	4.1	1.6	24.3	79.0	8.2	41.0	39.9	128.3	-88.4
VT31	1990	7.1	1.9	3.8	1.3	23.1	74.8	7.5	38.2	37.2	120.5	-83.3
VT32	1990	7.9	2.1	3.9	1.7	24.5	80.5	8.0	41.1	40.1	129.6	-89.5
VT34	1990	6.4	2.2	5.5	0.9	24.5	78.1	10.0	41.7	39.3	129.8	-90.4
VT35	1990	6.0	2.7	8.6	0.9	27.1	81.2	13.7	42.6	45.3	137.5	-92.1
VT36	1990	6.6	3.1	9.8	1.0	29.4	88.4	15.5	46.7	49.8	150.7	-100.9
VT37	1990	7.3	2.3	5.5	0.8	26.7	85.3	10.5	45.4	42.6	141.2	-98.6
VT38	1990	7.7	2.4	5.9	0.9	27.8	89.4	11.3	48.0	44.8	148.8	-104.0
VT39	1990	6.8	2.9	8.4	1.0	28.4	86.5	14.0	46.6	47.5	147.2	-99.6
VT41	1990	7.1	2.9	8.3	1.0	29.2	89.7	14.0	48.1	48.5	151.9	-103.4
VT46	1990	6.7	2.8	8.0	1.1	27.3	84.2	13.5	45.2	46.0	142.8	-96.9
VT48	1990	6.9	2.2	4.7	1.5	25.1	75.4	8.8	37.7	40.3	121.8	-81.5
VT49	1990	5.5	1.9	4.7	0.7	23.5	67.2	9.0	34.2	36.3	110.4	-74.1
VT50	1990	5.5	1.8	4.4	0.7	22.7	66.2	8.6	33.7	35.1	108.5	-73.4

Table I-2. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk
VT53	1990	5.5	2.5	8.2	0.8	26.1	74.1	12.8	37.9	43.1	124.7	-81.6
VT54	1990	7.6	2.3	5.6	0.9	28.3	88.2	10.8	45.8	44.6	144.8	-100.2
VT55	1990	6.4	2.0	4.8	0.7	24.8	76.6	9.3	39.2	38.8	125.1	-86.3
VT56	1990	6.5	2.1	5.3	0.8	24.9	77.8	10.0	40.9	39.6	128.6	-89.0
VT57	1990	6.1	2.0	5.0	0.7	23.4	72.6	9.4	38.1	37.3	120.1	-82.9
VT58	1990	4.2	2.2	8.5	0.7	22.0	55.2	11.8	27.4	37.6	94.4	-56.9
VT59	1990	4.4	2.5	9.9	0.7	23.3	59.4	13.4	29.5	40.8	102.3	-61.4
VT62	1990	4.8	2.4	8.6	0.7	24.5	61.9	12.5	30.8	41.1	105.2	-64.1
VT66	1990	4.4	2.4	9.7	0.7	23.0	57.3	13.1	28.3	40.2	98.6	-58.4
VT68	1990	7.3	3.1	9.1	1.1	30.8	95.5	15.1	51.0	51.4	161.5	-110.1
VT70	1990	7.0	3.0	8.7	1.0	29.5	91.7	14.4	49.0	49.3	155.1	-105.9
VT72	1990	7.6	3.1	9.0	1.1	31.6	98.3	15.1	52.4	52.4	165.9	-113.4
VT73	1990	7.4	3.0	8.7	1.1	30.7	95.6	14.7	50.9	51.0	161.2	-110.2
VT74	1990	7.2	3.0	8.5	1.1	30.2	93.8	14.3	49.8	49.9	157.9	-108.1
VT75	1990	4.5	2.4	9.4	0.7	23.1	57.8	12.9	28.7	40.1	99.4	-59.3
VT76	1990	6.6	2.4	6.3	1.1	26.0	79.5	11.2	42.0	42.4	132.6	-90.2
VT77	1990	6.8	2.6	6.9	1.1	26.9	81.3	12.0	43.4	44.2	136.7	-92.5
VT78	1990	7.0	1.8	4.0	0.9	24.0	73.0	7.7	39.7	37.8	120.4	-82.6
WOR	1994	7.2	3.2	10.4	1.0	28.0	82.7	17.2	43.0	49.9	142.9	-93.0
WOR1	1990	6.2	2.8	8.9	0.9	28.0	82.7	14.0	43.0	46.7	139.7	-93.0
WV523S	1994	14.5	3.3	5.6	1.4	38.0	133.5	15.9	70.7	62.8	220.1	-157.3
WV531S	1994	13.3	2.6	4.0	1.0	31.5	121.5	12.1	62.5	52.4	196.1	-143.7
WV547S	1994	10.0	2.3	4.2	1.0	26.4	96.1	11.0	52.1	43.9	159.1	-115.2
WV548S	1994	9.5	2.3	4.3	1.0	25.9	92.4	11.0	50.4	43.1	153.8	-110.6
WV769S	1994	13.3	2.8	4.4	1.1	31.6	120.9	12.8	63.6	53.1	197.4	-144.2
WV770S	1994	10.9	2.4	4.0	1.0	27.1	101.5	11.2	53.2	45.4	165.8	-120.5
WV771S	1994	11.9	2.3	3.3	0.9	27.3	106.9	10.6	55.3	45.7	172.9	-127.2
WV785S	1994	7.5	1.8	3.6	1.0	20.5	69.1	8.6	38.0	34.4	115.8	-81.4
WV788S	1994	10.3	2.4	4.5	1.1	27.3	99.2	11.5	53.7	45.5	164.4	-118.9
WV796S	1994	13.0	3.0	5.2	1.2	33.8	118.7	14.3	62.8	56.3	195.9	-139.6

Table I-3. The "fixed" soil parameter values and watershed characteristics used for calibration of each SAMI site. The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

	Runoff m/yr	Rainfall m/yr	Yield %	Riparian Area %	Depth m	Bulk Dens kg/m^3	CEC meq/kg	Half Sat. ueq/L	Al Solub log(KAl)
Average	0.7	1.3	52.7	0.1	0.9	1327.3	78.3		9.0
Std. Dev.	0.2	0.3	11.9	0.0	0.3	119.3	20.6		0.0
Maximum	1.6	2.5	83.4	0.1	1.9	1632.9	124.9		9.1
Minimum	0.3	0.9	29.7	0.1	0.4	937.2	16.1		8.9
Site ID	**Runoff m/yr**	**Rainfall m/yr**	**Yield %**	**Riparian Area %**	**Depth m**	**Bulk Dens kg/m^3**	**CEC meq/kg**	**Half Sat. ueq/L**	**Al Solub log(KAl)**
2A068015U	0.95	1.28	73.94	0.11	0.72	1225.0	81.0	129.9	9.06
2A07701	0.88	1.28	67.68	0.12	0.97	1288.5	75.6	124.7	9.02
2A07805	0.40	1.17	34.72	0.13	0.80	1277.2	78.0	125.2	8.99
2A07806	0.79	1.47	52.23	0.12	1.21	1325.4	62.4	128.4	8.99
2A07810L	0.63	1.17	56.41	0.13	0.76	1210.7	61.6	124.6	9.00
2A07810U	0.69	1.38	50.37	0.13	0.76	1210.8	62.0	112.4	9.03
2A07811	0.60	1.05	57.08	0.13	0.72	1226.4	80.9	130.5	8.99
2A07812	1.16	1.87	61.51	0.12	0.89	1324.8	76.5	121.8	9.01
2A07816	1.13	1.51	71.11	0.12	0.64	1142.8	89.9	94.3	9.02
2A07817	1.15	1.65	70.91	0.13	0.78	1225.6	82.2	123.0	9.00
2A07821	0.44	1.29	33.92	0.13	1.13	1336.7	61.4	126.8	9.04
2A07823	0.52	1.36	37.19	0.13	0.93	1360.7	74.1	121.1	9.00
2A07828	1.26	1.68	75.76	0.10	1.06	1233.6	68.5	106.5	8.97
2A07829	1.17	1.99	58.01	0.13	1.11	1302.8	64.7	123.2	8.98
2A07834	0.68	1.37	49.59	0.11	1.09	1280.3	65.1	125.0	8.95
2A07835	0.61	1.54	39.66	0.14	1.12	1364.1	59.7	121.2	9.03
2A07882	0.82	1.83	44.64	0.13	0.97	1233.6	74.1	122.7	8.99
2A08802	1.21	1.84	64.45	0.12	1.15	1393.4	54.4	122.1	8.99
2A08804	1.41	2.09	67.82	0.13	1.08	1318.5	62.9	126.3	8.98
2A08805	0.73	1.59	46.14	0.13	1.13	1341.2	59.9	124.2	9.02
2A08810	0.80	1.95	41.23	0.11	1.20	1362.3	57.4	113.6	8.94
2A08901	0.93	1.75	52.51	0.12	1.19	1345.7	59.8	118.5	9.05
2B041020L	0.51	0.97	54.13	0.14	0.58	1483.4	73.4	144.5	9.00
2B041049U	0.38	0.94	38.49	0.10	1.44	1232.3	56.7	111.9	9.02
2B047032	0.84	1.23	65.84	0.10	0.47	1434.3	71.6	133.7	9.11
2B047044U	1.07	1.23	83.38	0.15	0.48	1416.2	74.4	129.6	9.01
2B047076L	0.57	1.13	50.78	0.13	0.87	1344.0	124.9	123.8	8.99
2B047076U	0.75	1.31	56.88	0.13	0.87	1338.6	124.3	124.8	9.01
2B058015U	0.74	1.15	65.40	0.13	1.12	1116.5	36.1	128.2	9.12
2C041033U	0.78	1.38	55.74	0.14	0.64	1413.4	92.1	126.6	8.95
2C041039	0.57	1.29	44.23	0.12	0.71	1429.7	88.0	138.6	8.96
2C041040	0.52	1.22	40.51	0.13	0.63	1453.0	90.9	141.1	9.04
2C041043U	0.35	1.08	32.15	0.12	0.69	1473.3	87.6	123.3	9.05
2C041045	0.61	1.15	52.07	0.11	0.67	1445.5	87.7	117.3	9.07

Table I-3. Continued.

Site ID	Runoff m/yr	Rainfall m/yr	Yield %	Riparian Area %	Depth m	Bulk Dens kg/m^3	CEC meq/kg	Half Sat. ueq/L	Al Solub log(KAl)
2C041051	1.00	1.36	73.90	0.14	1.26	1632.9	57.3	120.3	8.94
2C046013L	0.68	1.29	54.88	0.12	0.77	1478.9	67.7	125.6	9.00
2C046033	0.75	1.29	58.33	0.12	0.84	1495.7	82.8	126.1	8.99
2C046034	0.92	1.42	65.72	0.12	0.62	1518.0	71.6	125.3	9.00
2C046043L	0.73	1.36	55.29	0.14	0.70	1501.0	72.5	124.8	9.00
2C046043U	0.71	1.30	52.89	0.13	0.86	1494.8	82.3	132.7	9.07
2C046050	0.59	1.14	51.91	0.13	0.77	1516.8	67.6	117.7	8.94
2C046053L	0.72	1.24	56.16	0.10	0.81	1507.9	68.1	131.7	8.92
2C046062L	0.58	1.25	45.59	0.14	0.57	1504.5	74.9	112.9	9.12
2C047007	0.65	1.28	48.96	0.12	0.56	1498.6	74.7	115.7	9.06
2C047010L	0.73	1.35	55.08	0.12	0.65	1437.5	93.4	126.3	9.02
2C047010U	0.82	1.36	58.68	0.13	0.63	1458.6	92.9	115.3	8.95
2C057004	0.48	1.10	43.21	0.14	0.71	1509.4	72.6	137.4	8.99
2C066026L	0.48	1.49	32.21	0.13	0.93	1372.7	74.1	128.3	9.01
2C066027L	1.07	1.49	72.51	0.13	0.48	1176.9	54.3	120.5	9.06
2C066027U	1.10	1.45	76.64	0.14	0.47	1237.1	55.2	137.9	9.08
2C066039L	0.56	1.55	36.73	0.13	0.94	1386.9	73.6	125.8	9.00
2C077022U	0.57	1.67	34.70	0.12	0.91	1399.0	74.4	124.5	8.99
BJ35	0.73	1.52	47.75	0.13	0.57	1154.7	82.8	126.8	9.02
BJ72	1.10	1.86	60.93	0.13	0.48	1138.9	54.2	112.0	9.03
BJ76	0.74	1.56	46.04	0.12	0.77	1242.7	81.4	117.9	9.04
BJ77	1.03	1.61	64.91	0.13	1.09	1302.4	65.5	123.5	8.98
BLFC	0.59	1.10	51.65	0.13	1.07	1119.4	34.4	139.2	9.02
CO01	0.95	1.59	60.37	0.12	1.93	1260.3	72.6	135.0	9.00
CO05	0.70	1.20	59.37	0.10	0.94	1385.4	76.3	136.7	9.11
CO06	1.42	2.03	69.66	0.13	1.82	1287.9	71.5	116.1	8.97
CO10	0.83	1.37	60.35	0.15	0.93	1416.1	75.1	123.6	9.00
DR	0.63	1.21	49.94	0.13	0.86	1351.3	102.5	142.6	9.08
DR01	0.57	1.20	47.04	0.12	0.85	1339.1	102.4	121.8	8.95
DS04	0.42	1.34	31.62	0.12	1.33	1345.0	64.2	123.8	9.01
DS06	0.42	1.33	31.65	0.13	1.33	1346.5	63.8	122.0	9.01
DS09	0.49	1.34	38.41	0.13	1.34	1331.3	64.6	128.5	8.99
DS19	0.44	1.34	33.28	0.13	1.32	1340.5	64.3	124.1	8.99
DS50	0.59	1.33	44.72	0.13	1.33	1346.6	64.5	128.0	9.00
FN1	0.62	1.43	43.72	0.11	0.48	1171.2	53.6	139.9	9.13
FN2	0.60	1.41	41.29	0.12	0.49	1243.0	57.2	141.3	9.07
FN3	0.52	1.45	35.25	0.12	0.49	1230.0	54.8	105.5	9.00
GS01	1.28	2.50	50.94	0.12	0.59	1165.2	82.8	120.8	9.00
GS02	1.56	2.52	63.53	0.11	0.49	1204.8	55.2	109.7	8.98
GS04	1.08	2.10	50.68	0.13	0.57	1160.4	82.0	124.6	8.99
GS05	0.98	1.53	62.24	0.12	0.96	1190.1	60.7	127.7	9.01
GS06	0.51	1.08	47.10	0.12	0.75	1214.6	61.5	127.0	9.00
GS07	0.97	1.76	55.28	0.12	1.19	1303.3	111.1	121.7	8.99

Table I-3. Continued.

Site ID	Runoff m/yr	Rainfall m/yr	Yield %	Riparian Area %	Depth m	Bulk Dens kg/m^3	CEC meq/kg	Half Sat. ueq/L	Al Solub log(KAl)
GS08	1.06	2.00	53.23	0.11	1.17	1327.1	109.1	142.1	9.07
LB01	0.77	1.42	55.41	0.13	0.98	1207.9	16.1	125.2	8.99
LEWF	0.76	1.35	53.92	0.12	0.75	937.2	52.6	124.7	8.98
M037	0.58	1.13	50.47	0.13	1.08	1107.7	35.1	129.8	9.02
M038	0.63	1.13	56.41	0.13	1.09	1099.4	34.7	126.5	8.99
M039	0.61	1.10	53.43	0.13	1.07	1099.9	34.4	121.5	9.06
NFD	0.68	1.46	46.65	0.13	1.26	993.5	80.1	122.9	9.01
NFDR	0.53	1.46	36.79	0.13	1.41	1234.0	74.5	128.2	9.02
OC02	0.47	1.35	33.52	0.12	1.45	1176.9	57.0	119.7	9.00
OC05	0.60	1.37	43.82	0.13	1.46	1168.7	57.5	125.4	9.00
OC08	0.53	1.35	39.53	0.12	1.44	1174.3	57.3	123.5	8.98
OC09	0.74	1.34	54.96	0.12	1.45	1168.6	57.1	128.0	9.02
OC31	0.60	1.36	44.43	0.12	1.45	1175.4	57.6	121.4	9.00
OC32	0.61	1.35	44.30	0.12	1.45	1178.8	57.2	129.1	8.97
OC35	0.59	1.37	42.94	0.13	1.45	1177.9	57.2	121.6	9.00
OC79	0.48	1.36	35.14	0.12	1.44	1167.2	57.5	122.5	8.99
PAIN	0.67	1.20	54.27	0.14	0.87	1324.9	104.8	118.3	8.96
SP10	0.69	1.55	43.99	0.12	1.02	1427.5	62.3	126.1	9.00
SP39	0.66	1.59	42.66	0.13	1.14	1460.3	53.6	124.4	9.01
SP41	0.70	1.58	44.73	0.13	0.99	1410.1	62.8	119.0	8.98
STAN	0.68	1.15	58.56	0.12	1.41	1229.3	73.8	127.7	9.01
VA524S	0.47	1.11	41.28	0.13	0.71	1511.0	72.9	126.6	8.99
VA526S	0.50	1.20	41.11	0.12	0.78	1510.5	68.6	128.8	8.99
VA531S	0.64	1.00	62.98	0.13	1.26	992.9	80.0	123.9	8.99
VA548S	0.34	1.13	31.19	0.14	0.44	1359.3	72.0	132.7	8.93
VA555S	0.70	1.15	60.52	0.12	1.08	1100.8	35.0	128.8	9.00
VA821S	0.56	1.05	51.96	0.14	0.79	1507.0	69.1	137.1	9.00
VT02	0.76	1.36	56.41	0.13	1.42	1234.3	74.3	126.5	9.01
VT05	0.70	1.17	59.21	0.12	0.87	1349.6	104.2	124.3	8.98
VT07	0.62	1.30	47.49	0.13	0.87	1348.0	104.2	122.3	9.01
VT08	0.59	1.24	47.76	0.13	0.87	1333.5	104.0	112.6	8.98
VT09	0.62	1.28	46.87	0.12	0.87	1344.9	104.1	126.6	9.02
VT10	0.63	1.18	53.60	0.12	0.87	1337.2	103.2	128.9	9.01
VT11	0.78	1.26	59.90	0.12	0.88	1342.5	104.2	119.2	9.05
VT12	0.71	1.21	60.30	0.13	0.86	1354.2	103.2	121.0	8.99
VT15	0.70	1.12	61.81	0.12	0.86	1349.8	104.1	126.1	9.02
VT18	0.85	1.36	64.42	0.13	0.74	1379.7	69.3	123.1	8.99
VT19	0.82	1.42	57.86	0.12	0.74	1397.8	70.5	138.9	9.02
VT20	0.51	1.06	47.95	0.12	0.86	1351.2	103.8	124.1	9.01
VT24	0.48	1.08	44.80	0.13	0.87	1350.9	104.4	124.5	9.00
VT25	0.54	1.11	49.12	0.13	0.87	1356.9	104.0	122.8	8.99
VT26	0.35	1.13	29.71	0.12	0.87	1354.7	103.8	125.8	8.98
VT28	0.54	1.10	47.28	0.11	0.85	1353.3	102.6	139.2	8.97

Table I-3. Continued.

Site ID	Runoff m/yr	Rainfall m/yr	Yield %	Riparian Area %	Depth m	Bulk Dens kg/m^3	CEC meq/kg	Half Sat. ueq/L	Al Solub log(KAl)
VT29	0.57	1.17	45.71	0.12	0.87	1343.4	103.9	125.1	9.01
VT31	0.56	1.12	50.07	0.12	0.85	1358.7	102.2	137.8	8.97
VT32	0.42	1.17	35.98	0.13	0.87	1342.8	103.7	128.4	8.99
VT34	0.61	1.08	56.83	0.13	0.88	1349.7	101.2	120.5	9.00
VT35	0.60	1.20	50.06	0.12	0.87	1371.1	103.6	138.9	9.00
VT36	0.70	1.32	54.08	0.13	0.85	1325.6	103.7	126.7	8.96
VT37	0.69	1.25	55.11	0.13	0.75	1369.1	68.3	117.0	9.03
VT38	0.71	1.33	55.17	0.12	0.75	1353.6	69.4	143.6	9.02
VT39	0.97	1.24	77.89	0.13	0.86	1352.2	103.8	126.0	9.01
VT41	0.92	1.28	71.71	0.12	0.87	1342.1	104.0	123.0	8.98
VT46	0.61	1.19	50.07	0.12	1.41	1240.3	74.3	125.5	8.99
VT48	0.53	1.12	47.64	0.12	0.86	1346.6	104.4	123.6	9.00
VT49	0.47	1.02	45.74	0.11	0.85	1345.2	103.4	132.7	8.96
VT50	0.40	1.02	38.85	0.13	0.84	1341.8	105.7	142.8	8.95
VT53	0.57	1.16	50.08	0.13	0.85	1347.9	103.8	123.3	9.03
VT54	0.70	1.30	55.46	0.11	0.72	1359.3	70.4	138.6	9.03
VT55	0.48	1.16	41.28	0.12	0.75	1389.8	68.6	139.6	8.97
VT56	0.70	1.16	58.88	0.12	0.85	1371.4	103.4	117.0	9.02
VT57	0.55	1.10	50.06	0.12	0.74	1375.8	69.4	121.5	9.02
VT58	0.51	1.08	46.81	0.13	1.42	1235.4	74.4	122.5	8.99
VT59	0.57	1.15	49.61	0.12	1.41	1246.4	74.7	121.8	9.02
VT62	0.51	1.17	43.73	0.13	1.41	1239.8	74.8	124.4	9.00
VT66	0.41	1.16	35.34	0.12	1.18	1336.1	107.1	126.6	9.00
VT68	1.06	1.32	81.62	0.13	0.87	1344.3	104.6	127.2	9.00
VT70	1.01	1.27	81.29	0.13	0.86	1347.1	104.3	120.9	9.00
VT72	1.01	1.36	72.97	0.12	0.86	1343.8	104.5	126.9	8.98
VT73	0.92	1.32	71.43	0.12	0.86	1341.2	104.6	128.0	8.99
VT74	0.97	1.28	73.15	0.13	0.87	1355.2	104.1	122.5	9.02
VT75	0.47	1.17	40.66	0.12	1.18	1331.5	107.7	126.0	9.01
VT76	0.63	1.13	56.45	0.13	0.86	1352.7	104.0	125.9	9.01
VT77	0.67	1.17	56.91	0.13	0.86	1352.1	103.1	119.1	9.01
VT78	0.75	1.22	61.75	0.13	0.86	1353.6	104.4	125.9	9.00
WOR	0.74	1.24	58.09	0.13	0.87	1342.1	124.6	122.5	9.00
WOR1	0.65	1.23	53.07	0.13	0.86	1343.3	103.8	126.8	8.98
WV523S	1.07	1.60	66.24	0.12	1.33	1336.5	63.8	130.6	9.00
WV531S	0.95	1.30	69.01	0.14	0.86	1526.7	83.0	133.0	8.95
WV547S	0.48	1.24	38.50	0.14	0.80	1551.0	69.2	130.4	9.01
WV548S	0.73	1.29	55.57	0.12	0.62	1518.5	71.2	120.3	8.99
WV769S	0.91	1.41	63.66	0.12	0.65	1402.6	89.4	125.0	9.14
WV770S	0.60	1.25	49.18	0.14	0.57	1476.6	72.5	139.3	8.98
WV771S	0.40	1.14	35.46	0.13	0.69	1487.0	84.4	112.4	9.03
WV785S	0.56	1.07	55.72	0.12	0.65	1508.0	68.6	142.5	8.97
WV788S	0.97	1.33	73.08	0.13	0.71	1528.4	71.8	112.8	9.04

Table I-3. Continued.

Site ID	Runoff m/yr	Rainfall m/yr	Yield %	Riparian Area %	Depth m	Bulk Dens kg/m^3	CEC meq/kg	Half Sat. ueq/L	Al Solub log(KAl)
WV796S	1.11	1.47	74.46	0.12	0.69	1451.2	88.9	126.0	9.01

Table I-4. The observed stream variable values (μeq/L) used for calibration of each SAMI site. The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
	Average	60.5	47.2	31.6	16.5	0.4	85.0	21.1	12.2	156.2	118.3	37.8	6.1
	Std. Dev.	40.1	30.3	23.4	10.0	0.7	55.8	23.4	15.2	82.8	68.0	51.5	0.8
	Maximum	198.7	204.1	205.9	52.6	6.0	368.5	278.6	95.8	519.4	434.3	148.3	7.2
	Minimum	9.3	10.7	6.8	2.3	0.0	14.7	6.5	0.0	35.3	29.7	-109.6	4.1
Site ID	**Calibration Year**	**Ca**	**Mg**	**Na**	**K**	**NH_4**	**SO_4**	**Cl**	**NO_3**	**SBC**	**SAA**	**Calk**	**pH**
2A068015U	1985	23.4	24.9	20.9	16.9	1.1	26.2	9.1	16.5	87.2	51.7	35.4	6.4
2A07701	1985	81.3	29.2	38.3	12.9	0.3	27.2	15.7	13.0	162.1	56.0	106.1	7.1
2A07805	1985	85.5	38.7	53.2	10.6	2.1	40.8	21.5	24.8	190.1	87.0	103.0	7.0
2A07806	1985	68.5	22.2	71.6	14.2	0.8	28.5	13.9	16.2	177.4	58.6	118.8	7.0
2A07810L	1985	63.9	27.8	34.5	12.1	0.8	35.8	13.4	16.8	139.0	66.0	73.0	6.9
2A07810U	1985	45.0	23.0	47.6	11.7	0.9	28.2	14.0	19.0	128.2	61.2	67.0	6.8
2A07811	1985	52.9	30.3	27.9	10.3	0.6	43.6	12.7	39.4	121.9	95.7	26.2	6.4
2A07812	1985	53.6	26.5	58.7	13.4	0.9	23.2	12.1	3.7	153.1	39.0	114.1	7.1
2A07816	1985	33.7	16.5	34.5	10.5	0.6	20.1	11.8	7.6	95.8	39.4	56.4	6.8
2A07817	1985	39.6	19.2	29.7	9.4	0.5	23.6	11.3	20.8	98.3	55.7	42.7	6.6
2A07821	1985	59.1	26.0	79.0	13.8	0.4	17.4	26.6	7.6	178.2	51.6	126.6	7.1
2A07823	1985	71.7	50.3	70.0	21.1	0.7	65.7	24.8	3.4	213.8	93.9	119.9	7.1
2A07828	1985	29.8	20.6	32.4	10.1	0.8	18.0	13.6	4.3	93.6	35.9	57.7	6.8
2A07829	1985	31.0	18.8	43.0	11.2	2.9	14.7	16.5	9.8	106.8	41.0	65.8	6.9
2A07834	1985	27.3	18.7	40.1	8.4	0.7	17.3	22.5	2.9	95.2	42.7	52.5	6.8
2A07835	1985	41.4	29.9	71.5	10.3	0.5	24.8	25.2	1.5	153.5	51.5	101.9	7.0
2A07882	1985	60.5	32.7	51.3	11.5	0.6	21.8	18.9	15.5	156.6	56.2	100.4	7.0
2A08802	1985	36.4	49.4	39.3	14.9	0.9	15.0	18.9	6.2	141.0	40.1	100.9	6.6
2A08804	1985	28.0	26.9	38.2	12.0	0.9	22.7	19.2	3.2	106.0	45.1	60.9	6.8
2A08805	1985	66.5	50.6	57.3	15.8	0.5	33.1	27.1	7.0	190.7	67.2	123.5	6.9
2A08810	1985	72.0	59.6	61.6	16.8	0.6	21.5	30.8	14.8	210.6	67.0	143.6	7.2
2A08901	1985	57.2	32.8	62.8	15.6	1.3	16.6	22.2	6.7	169.8	45.5	124.2	7.2
2B041020L	1985	198.7	204.1	74.3	41.6	0.7	368.5	43.8	4.3	519.4	416.6	102.8	6.7
2B041049U	1985	60.3	86.7	23.0	20.1	0.5	229.3	24.8	0.2	190.6	254.3	-63.8	4.7
2B047032	1985	111.3	84.1	37.6	17.6	0.9	124.0	12.8	36.3	251.4	173.1	78.4	6.8
2B047044U	1985	113.8	74.0	38.4	17.6	1.0	96.4	10.0	11.3	244.8	117.7	127.1	6.9
2B047076L	1985	27.0	47.0	26.6	41.1	0.2	108.7	23.3	0.2	141.8	132.2	9.6	5.6
2B047076U	1985	34.1	40.8	26.5	52.6	0.0	111.5	22.1	6.6	153.9	140.2	13.7	5.9
2B058015U	1985	11.6	39.1	21.6	32.8	0.0	73.8	18.6	0.1	105.1	92.4	12.7	5.9
2C041033U	1985	129.5	71.9	34.9	22.0	0.7	159.1	46.6	41.1	258.9	246.7	12.2	5.7
2C041039	1985	141.5	91.3	38.2	19.3	0.8	174.5	19.8	33.1	291.1	227.4	63.7	6.7
2C041040	1985	116.0	104.1	36.0	26.9	1.4	184.2	22.1	42.8	284.4	249.1	35.3	6.4
2C041043U	1985	149.5	132.9	57.2	31.7	2.0	209.4	28.1	33.2	373.2	270.6	102.6	6.4
2C041045	1985	172.2	104.5	93.1	19.8	1.1	154.1	69.1	27.1	390.6	250.3	140.3	7.0
2C041051	1985	89.6	39.7	21.0	7.1	0.9	161.8	10.8	2.5	158.3	175.1	-16.8	4.9
2C046013L	1985	111.5	107.8	43.6	16.9	0.7	136.7	41.8	28.4	280.5	206.8	73.7	6.8
2C046033	1985	61.4	52.0	7.9	10.0	0.9	85.4	13.4	39.9	132.1	138.6	-6.5	5.7
2C046034	1985	77.3	52.9	7.4	8.3	0.8	109.6	12.3	34.3	146.7	156.2	-9.5	5.5
2C046043L	1985	126.8	55.4	82.4	8.1	0.8	140.9	93.7	29.7	273.6	264.2	9.4	5.8
2C046043U	1985	117.0	53.7	70.9	8.1	0.9	137.9	79.1	29.8	250.6	246.8	3.7	5.6

Table I-4. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
2C046050	1985	153.7	91.4	205.9	37.2	6.0	140.3	278.6	15.4	494.2	434.3	59.9	6.4
2C046053L	1985	103.5	81.8	15.4	12.5	0.7	137.5	12.5	26.1	214.0	176.1	37.9	6.5
2C046062L	1985	186.6	169.5	29.5	17.6	1.9	234.0	14.9	26.7	405.1	275.6	129.5	7.0
2C047007	1985	141.7	109.8	49.2	26.5	1.3	222.8	15.8	13.4	328.5	251.9	76.6	6.8
2C047010L	1985	70.1	50.1	22.5	18.0	1.3	74.1	15.1	52.9	162.1	142.1	20.0	6.5
2C047010U	1985	71.9	49.9	22.2	18.5	0.9	72.6	13.5	54.5	163.4	140.6	22.8	6.5
2C057004	1985	75.9	92.7	17.1	16.9	0.7	169.3	16.1	6.9	203.2	192.3	11.0	5.7
2C066026L	1985	55.9	51.3	24.4	18.2	1.3	71.4	37.2	11.9	151.0	120.6	30.4	6.2
2C066027L	1985	27.0	37.4	20.2	15.1	2.0	56.8	16.3	3.0	101.6	76.2	25.5	5.9
2C066027U	1985	9.3	25.2	18.8	10.4	0.9	57.7	16.1	0.3	64.5	74.1	-9.5	5.1
2C066039L	1985	73.9	39.2	29.0	17.9	3.4	71.8	33.9	4.2	163.2	109.9	53.3	6.4
2C077022U	1985	44.6	42.9	32.1	11.9	1.2	51.2	36.4	2.4	132.8	90.0	42.7	6.3
BJ35	1999	87.9	38.7	32.9	6.6	0.0	48.3	11.9	95.8	166.0	156.1	10.0	5.4
BJ72	1999	19.7	12.9	25.9	6.6	0.0	33.8	10.2	5.5	65.1	49.6	15.5	5.7
BJ76	1999	30.8	19.9	35.3	9.2	0.0	26.1	13.7	6.9	95.2	46.7	48.5	6.4
BJ77	1999	23.9	16.9	30.9	8.2	0.0	22.7	11.3	3.2	79.9	37.2	42.7	6.4
BLFC	1991	11.5	27.8	20.6	24.4	0.0	51.3	18.7	0.3	84.4	70.3	14.1	6.0
CO01	1993	11.2	24.4	13.3	21.3	0.0	23.5	22.7	1.9	70.3	48.1	22.2	6.5
CO05	1993	54.4	55.1	12.6	30.7	0.0	76.7	28.6	4.6	152.8	109.9	42.8	6.5
CO06	1993	31.2	30.2	19.8	22.7	0.0	19.8	17.7	0.7	103.8	38.2	65.6	6.4
CO10	1993	54.6	63.0	11.8	32.3	0.0	83.2	26.7	3.1	161.7	112.9	48.8	6.5
DR	1994	24.3	47.1	24.2	42.9	0.0	105.9	25.3	3.9	138.6	135.2	3.4	5.4
DR01	1990	22.3	44.8	24.6	44.7	0.0	109.3	23.3	0.1	136.4	132.7	3.7	5.5
DS04	1994	35.2	30.0	9.0	6.1	1.2	116.8	11.7	6.7	81.5	135.3	-53.8	4.3
DS06	1994	26.7	24.6	9.5	4.7	1.3	111.6	11.6	6.6	66.8	129.8	-63.0	4.2
DS09	1994	37.1	23.1	9.3	5.1	1.2	104.9	10.0	2.8	75.8	117.7	-41.9	4.4
DS19	1994	53.9	26.5	8.7	5.3	1.2	96.8	11.3	5.5	95.6	113.5	-17.9	4.7
DS50	1994	37.2	18.8	8.7	4.1	1.3	72.8	8.3	3.6	70.1	84.7	-14.6	4.5
FN1	1994	85.9	80.8	31.4	15.5	0.0	195.3	11.7	7.7	213.5	214.8	-1.3	6.0
FN2	1994	88.3	66.9	21.1	17.9	0.0	157.0	12.4	29.5	194.2	198.9	-4.7	6.1
FN3	1994	78.8	62.1	14.5	14.5	0.3	104.8	14.1	51.8	170.1	170.7	-0.6	5.8
GS01	2000	49.5	23.8	22.1	8.5	0.0	41.4	12.4	42.6	103.8	96.3	7.5	5.9
GS02	2000	45.0	18.4	22.8	5.8	0.0	28.4	10.1	37.2	92.1	75.7	16.4	6.1
GS04	2000	98.8	49.9	41.4	7.2	0.0	76.0	12.2	41.9	197.3	130.1	67.2	6.7
GS05	2000	19.6	12.0	27.1	13.8	0.0	19.9	9.5	0.3	72.5	29.7	42.8	6.2
GS06	2000	67.0	29.3	44.5	10.4	0.0	40.1	12.8	3.9	151.2	56.7	94.5	6.3
GS07	2000	32.3	16.7	31.2	7.6	0.0	25.3	11.4	26.6	87.9	63.4	24.5	6.3
GS08	2000	31.4	16.9	30.8	8.0	0.0	16.9	11.9	24.1	87.1	52.9	34.2	6.4
LB01	1987	117.8	34.1	21.1	20.9	1.3	106.5	33.7	1.0	195.3	141.2	54.1	6.5
LEWF	1991	54.4	25.8	44.1	11.8	0.0	42.9	12.5	50.6	136.1	105.9	30.2	6.4
M037	1991	20.8	40.8	30.2	27.0	0.0	68.8	18.6	0.3	118.9	87.7	31.1	6.3
M038	1991	27.3	42.0	25.8	28.3	0.0	75.6	16.8	0.3	123.4	92.7	30.7	6.3
M039	1991	13.2	24.7	19.4	26.2	0.0	42.0	17.5	0.3	83.6	59.8	23.8	6.2
NFD	1994	94.2	54.9	73.7	10.3	0.0	99.4	28.1	28.6	233.1	156.0	77.1	6.5
NFDR	1990	87.9	50.6	75.1	9.6	0.0	98.7	29.5	33.4	223.1	161.7	61.5	6.4
OC02	1994	54.1	26.0	8.0	6.2	1.3	123.2	10.2	19.2	95.6	152.6	-57.0	4.6
OC05	1994	22.5	15.2	7.4	3.4	1.4	122.9	7.9	1.8	49.9	132.7	-82.8	4.1

Table I-4. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
OC08	1994	28.7	23.7	7.1	5.0	1.2	128.8	8.9	2.1	65.7	139.8	-74.1	4.4
OC09	1994	14.2	10.7	6.8	2.3	1.2	117.8	6.5	0.7	35.3	125.0	-89.7	4.1
OC31	1994	21.1	14.9	7.4	3.2	1.1	148.1	7.9	1.4	47.7	157.3	-109.6	4.1
OC32	1994	28.0	18.3	7.3	4.2	1.1	124.1	7.8	2.7	58.9	134.5	-75.6	4.2
OC35	1994	61.3	30.5	14.7	5.2	1.1	158.3	8.0	2.1	112.7	168.4	-55.7	4.5
OC79	1994	70.5	36.1	9.7	8.2	1.1	74.4	9.9	23.2	125.5	107.6	17.9	6.0
PAIN	1994	34.1	60.0	22.4	47.3	0.0	111.3	24.8	22.4	163.8	158.5	5.3	5.6
SP10	1992	63.4	60.8	26.0	26.4	0.0	93.7	31.7	1.8	176.5	127.2	49.3	6.2
SP39	1992	34.2	54.4	29.9	21.5	0.0	74.9	33.7	0.0	139.9	108.6	31.3	6.8
SP41	1993	70.9	70.2	39.7	29.1	0.0	69.7	32.1	6.0	209.9	107.8	102.1	4.7
STAN	1994	68.4	30.9	59.6	10.4	0.0	43.6	24.5	5.0	169.3	73.1	96.2	6.6
VA524S	1994	63.9	52.6	18.7	18.7	0.6	120.0	21.0	4.6	154.5	145.6	8.9	5.5
VA526S	1994	132.2	94.6	27.4	18.9	0.0	123.0	18.0	1.3	273.1	142.3	130.8	7.1
VA531S	1994	49.9	39.5	60.5	9.2	0.0	48.0	23.0	20.3	159.1	91.3	67.8	6.7
VA548S	1994	39.9	79.8	50.9	20.7	0.0	117.0	39.0	5.7	191.3	161.7	29.6	5.7
VA555S	1994	32.9	31.3	16.1	11.8	0.0	43.0	19.0	0.4	92.1	62.4	29.7	6.3
VA821S	1994	143.7	116.0	53.5	19.4	0.0	163.0	54.0	0.0	332.6	217.0	115.6	7.0
VT02	1990	54.6	24.8	43.9	13.7	0.0	47.8	12.3	38.7	137.0	98.8	38.2	6.5
VT05	1990	32.1	43.2	29.1	21.7	0.0	37.1	11.6	0.4	126.1	49.1	77.1	6.8
VT07	1990	58.1	28.1	18.0	8.4	0.0	82.0	13.4	13.5	112.7	108.8	3.9	5.1
VT08	1990	66.3	30.5	17.9	8.9	0.0	77.8	13.6	9.6	123.5	100.9	22.7	5.8
VT09	1990	47.9	28.5	15.4	8.9	0.0	69.1	13.4	3.1	100.7	85.6	15.0	5.8
VT10	1990	31.3	30.5	17.1	12.2	0.0	45.9	15.2	0.1	91.1	61.2	29.9	6.3
VT11	1990	32.1	31.9	13.4	11.7	0.0	35.3	13.4	2.1	89.1	50.8	38.3	6.2
VT12	1990	85.0	71.9	14.5	14.2	0.0	32.5	13.8	1.9	185.5	48.1	137.4	6.9
VT15	1990	29.0	25.5	15.5	11.8	0.0	30.6	13.0	0.3	81.8	44.0	37.9	6.2
VT18	1990	69.5	55.5	28.5	18.0	0.0	80.2	11.7	15.9	171.5	107.8	63.7	6.6
VT19	1990	73.7	59.4	25.4	19.6	0.0	69.7	12.7	31.2	178.0	113.5	64.5	6.6
VT20	1990	125.7	52.5	22.5	14.5	0.0	83.5	16.9	0.1	215.1	100.6	114.6	7.0
VT24	1990	47.8	25.9	16.9	12.7	0.0	53.1	17.2	0.6	103.3	70.8	32.5	6.3
VT25	1990	22.0	23.9	14.0	9.3	0.0	41.1	15.9	0.1	69.2	57.0	12.2	5.8
VT26	1990	49.8	36.4	14.8	13.4	0.0	91.6	21.8	0.9	114.3	114.3	0.0	5.3
VT28	1990	22.4	24.0	12.3	9.2	0.0	41.3	14.3	0.1	67.9	55.8	12.1	5.5
VT29	1990	19.6	20.5	11.3	8.6	0.0	34.5	14.5	0.8	60.0	49.8	10.3	5.5
VT31	1990	14.7	21.8	13.7	8.0	0.0	41.0	16.6	0.1	58.2	57.7	0.5	5.2
VT32	1990	58.2	34.6	12.2	9.9	0.0	76.4	19.0	13.9	114.8	109.4	5.5	5.4
VT34	1990	66.1	38.5	18.8	12.2	0.0	69.5	16.7	0.1	135.6	86.3	49.3	6.6
VT35	1990	25.9	48.1	24.1	44.9	0.0	111.4	22.7	0.5	143.0	134.6	8.4	5.9
VT36	1990	23.8	40.4	21.8	26.2	0.0	89.1	22.2	0.1	112.2	111.4	0.8	5.5
VT37	1990	39.7	47.3	24.1	17.6	0.0	72.8	15.0	3.7	128.7	91.5	37.1	6.4
VT38	1990	82.8	79.0	36.9	20.5	0.0	128.8	15.7	0.6	219.2	145.1	74.1	6.8
VT39	1990	11.4	20.1	16.3	14.4	0.0	54.9	14.5	0.1	62.2	69.4	-7.3	5.1
VT41	1990	24.6	29.4	17.4	17.6	0.0	64.4	15.1	0.1	89.0	79.7	9.4	5.8
VT46	1990	65.1	22.0	56.3	5.6	0.0	39.3	22.2	3.6	149.1	65.1	83.9	6.7
VT48	1990	23.3	39.8	31.6	36.0	0.0	56.9	16.5	0.3	130.6	73.7	56.9	6.7
VT49	1990	49.1	68.3	21.3	16.5	0.0	123.3	19.2	2.8	155.2	145.2	10.0	5.8
VT50	1990	31.0	67.3	18.6	19.3	0.0	140.6	21.9	10.1	136.2	172.5	-36.3	4.8

Table I-4. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
VT53	1990	27.6	46.8	27.4	38.2	0.0	98.6	23.0	0.3	140.0	121.8	18.1	6.1
VT54	1990	80.3	78.0	33.9	21.9	0.0	130.4	15.7	12.4	214.1	158.5	55.6	6.5
VT55	1990	94.1	117.5	68.8	23.2	0.0	164.0	19.6	17.8	303.6	201.4	102.2	6.7
VT56	1990	21.7	40.8	16.3	18.8	0.0	76.9	14.3	0.6	97.6	91.7	5.9	5.7
VT57	1990	52.3	68.5	28.2	21.4	0.0	112.5	17.1	7.6	170.3	137.2	33.1	6.4
VT58	1990	55.7	34.2	60.7	9.6	0.0	40.4	23.0	6.8	160.2	70.1	90.0	6.8
VT59	1990	59.4	24.3	61.4	9.4	0.0	41.1	23.6	2.9	154.5	67.6	87.0	6.7
VT62	1990	59.0	41.2	63.2	10.2	0.0	39.3	24.5	4.3	173.7	68.1	105.5	6.7
VT66	1990	113.3	88.1	59.0	4.9	0.0	53.3	31.9	31.8	265.3	117.0	148.3	6.9
VT68	1990	13.9	19.2	15.3	12.6	0.0	53.6	14.3	0.1	61.0	67.9	-7.0	5.1
VT70	1990	19.8	21.8	16.9	19.9	0.0	46.4	14.2	0.1	78.5	60.7	17.8	5.9
VT72	1990	18.7	23.7	15.8	20.6	0.0	66.2	15.0	0.1	78.7	81.3	-2.6	5.1
VT73	1990	30.2	36.3	21.8	25.2	0.0	74.2	16.0	0.3	113.5	90.6	22.9	6.1
VT74	1990	21.6	25.6	15.9	15.6	0.0	58.5	14.8	0.1	78.8	73.4	5.4	5.6
VT75	1990	109.5	86.4	53.9	4.6	0.0	53.1	27.5	33.2	254.4	113.7	140.7	6.7
VT76	1990	14.0	30.9	23.1	28.1	0.0	59.7	17.9	0.1	96.0	77.6	18.4	6.0
VT77	1990	23.7	40.9	33.5	28.4	0.0	57.4	17.8	0.0	126.6	75.2	51.4	6.7
VT78	1990	23.6	22.8	10.5	6.8	0.0	56.1	10.2	5.3	63.7	71.6	-7.9	5.1
WOR	1994	35.6	57.9	21.5	40.4	0.0	74.8	23.5	32.0	155.3	130.3	25.0	5.9
WOR1	1990	28.3	49.2	22.6	38.3	0.0	83.1	21.4	5.5	138.4	110.0	28.4	6.0
WV523S	1994	51.4	26.3	8.3	9.5	0.0	95.0	15.0	26.7	95.5	136.7	-41.2	4.8
WV531S	1994	104.3	23.9	9.6	6.4	0.0	120.0	13.0	8.0	144.2	141.0	3.2	5.5
WV547S	1994	141.2	102.8	40.5	16.1	0.0	200.0	22.0	22.8	300.6	244.8	55.8	7.0
WV548S	1994	70.4	53.5	10.4	12.5	0.0	108.0	15.0	31.1	146.8	154.1	-7.3	5.3
WV769S	1994	122.3	87.2	10.4	16.6	0.0	170.0	14.0	19.5	236.5	203.5	33.0	6.6
WV770S	1994	138.2	109.4	56.5	29.9	0.0	208.0	19.0	12.2	334.0	239.2	94.8	6.9
WV771S	1994	191.6	96.2	48.7	19.2	0.0	171.0	26.0	17.5	355.7	214.5	141.2	7.0
WV785S	1994	65.9	65.8	26.5	17.1	0.0	164.0	32.0	0.0	175.3	196.0	-20.7	4.9
WV788S	1994	71.4	39.5	9.1	10.7	0.0	96.0	12.0	15.7	130.7	123.7	7.0	5.9
WV796S	1994	80.3	33.7	10.0	4.9	0.0	85.0	7.0	0.0	128.9	92.0	36.9	6.2

Table I-5 The simulated stream variable values resulting from the calibration of each SAMI site (median values of multiple calibrations at each site). The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
	Average	60.6	47.2	31.5	16.4	0.0	84.9	21.2	13.0	155.6	119.2	36.5	6.2
	Std. Dev.	40.1	30.3	23.4	10.0	0.0	55.8	23.8	15.7	82.4	69.0	51.2	0.8
	Maximum	199.1	204.2	205.9	52.6	0.0	368.3	283.7	86.2	518.4	443.1	142.5	7.2
	Minimum	11.3	10.8	6.9	2.4	0.0	14.6	6.3	0.2	34.5	29.7	-110.8	4.6
Site ID	**Calibration Year**	**Ca**	**Mg**	**Na**	**K**	**NH_4**	**SO_4**	**Cl**	**NO_3**	**SBC**	**SAA**	**Calk**	**pH**
2A068015U	1985	23.2	25.1	21.0	16.8	0.0	26.0	10.3	16.0	86.9	52.5	33.4	6.5
2A07701	1985	81.4	29.3	38.3	12.8	0.0	27.1	15.9	12.9	161.9	56.3	105.7	7.0
2A07805	1985	85.2	38.6	53.2	10.6	0.0	40.7	21.1	24.6	187.7	86.1	101.1	7.0
2A07806	1985	68.9	22.2	71.6	14.4	0.0	28.6	14.3	16.3	177.8	58.2	118.1	7.1
2A07810L	1985	64.0	27.9	34.6	12.3	0.0	35.8	12.9	17.0	138.7	65.9	72.0	6.9
2A07810U	1985	44.7	22.9	47.5	11.4	0.0	28.3	13.7	18.9	126.9	61.5	64.7	6.8
2A07811	1985	53.2	30.4	27.6	10.2	0.0	43.5	12.7	38.6	122.0	94.8	29.0	6.5
2A07812	1985	53.7	26.7	58.8	13.3	0.0	23.1	12.2	3.8	152.3	39.0	113.3	7.1
2A07816	1985	33.1	16.1	34.2	10.3	0.0	20.4	12.2	8.1	93.9	40.6	52.9	6.7
2A07817	1985	39.8	19.4	29.7	9.5	0.0	23.6	11.1	21.1	98.2	55.5	41.8	6.6
2A07821	1985	59.5	26.0	79.1	13.9	0.0	17.2	27.4	7.4	178.2	52.0	125.9	7.1
2A07823	1985	71.9	50.5	69.8	21.0	0.0	65.5	25.1	3.8	213.4	94.7	118.7	7.1
2A07828	1985	29.5	21.1	32.7	10.2	0.0	17.9	13.5	4.5	93.1	35.5	57.2	6.8
2A07829	1985	30.6	18.7	43.0	11.2	0.0	14.6	16.8	10.0	103.9	41.0	63.5	6.8
2A07834	1985	26.9	18.8	40.0	8.6	0.0	17.1	22.5	3.1	94.5	42.6	52.1	6.7
2A07835	1985	41.6	29.8	71.4	10.1	0.0	25.0	25.9	1.7	152.7	52.2	100.0	7.0
2A07882	1985	60.3	32.6	51.3	11.4	0.0	21.9	19.0	15.8	155.7	56.1	98.6	7.0
2A08802	1985	36.5	49.4	39.3	14.8	0.0	15.0	19.3	6.3	140.3	40.7	101.3	7.0
2A08804	1985	28.3	27.5	38.2	12.2	0.0	22.5	19.0	3.1	106.2	45.2	59.8	6.8
2A08805	1985	66.8	50.9	57.3	15.5	0.0	33.1	27.0	7.0	191.0	66.6	123.6	7.1
2A08810	1985	72.3	59.5	61.5	16.8	0.0	21.3	31.2	15.0	210.0	67.4	142.5	7.2
2A08901	1985	57.2	32.7	62.7	15.7	0.0	16.6	23.2	7.4	168.2	47.2	121.6	7.1
2B041020L	1985	199.1	204.2	73.7	41.2	0.0	368.3	45.0	4.9	518.4	418.1	101.2	7.0
2B041049U	1985	60.9	86.5	22.2	19.8	0.0	229.1	27.3	0.5	189.4	256.8	-68.1	4.6
2B047032	1985	111.1	84.1	37.4	17.9	0.0	124.3	13.2	41.6	250.6	178.0	73.1	6.9
2B047044U	1985	113.9	74.2	38.3	17.7	0.0	96.3	10.2	12.8	243.3	119.4	125.0	7.1
2B047076L	1985	27.8	46.8	26.3	40.7	0.0	108.6	23.0	0.5	141.3	132.4	8.8	5.9
2B047076U	1985	34.3	41.1	26.6	52.6	0.0	111.8	22.0	7.3	154.2	141.3	12.7	6.1
2B058015U	1985	11.5	39.2	21.7	32.9	0.0	73.8	17.9	0.3	105.8	91.8	12.9	6.1
2C041033U	1985	129.4	71.9	34.8	22.2	0.0	159.0	45.7	43.8	258.9	248.6	10.0	6.0
2C041039	1985	140.6	91.3	37.8	19.3	0.0	174.2	20.3	36.6	289.4	231.1	58.7	6.8
2C041040	1985	116.0	104.1	35.6	27.1	0.0	184.5	22.0	45.9	282.5	252.7	30.3	6.5
2C041043U	1985	149.1	132.7	56.6	31.5	0.0	209.3	28.2	36.8	369.9	275.1	96.8	7.0
2C041045	1985	172.2	104.5	92.8	19.5	0.0	154.2	70.9	30.2	389.6	255.2	134.4	7.1
2C041051	1985	89.7	39.9	20.6	7.0	0.0	161.9	11.1	2.9	157.5	176.4	-18.6	4.9
2C046013L	1985	111.9	107.7	43.2	16.9	0.0	136.5	42.1	30.6	279.9	208.4	70.2	6.8
2C046033	1985	61.5	52.1	7.9	9.9	0.0	85.1	13.4	43.9	132.0	143.1	-11.5	5.0
2C046034	1985	77.4	53.0	7.2	8.2	0.0	109.4	12.2	37.4	145.9	158.9	-13.1	5.0
2C046043L	1985	127.0	55.6	82.7	8.1	0.0	140.8	94.7	32.7	272.6	268.8	4.4	5.7

Table I-5. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
2C046043U	1985	117.0	53.6	70.5	7.8	0.0	137.8	81.6	34.4	249.5	253.8	-5.8	5.2
2C046050	1985	153.9	91.8	205.9	37.1	0.0	140.4	283.7	17.5	488.4	443.1	46.6	6.7
2C046053L	1985	103.5	81.9	15.5	12.2	0.0	138.1	13.0	29.8	212.8	180.2	31.8	6.5
2C046062L	1985	186.7	170.3	29.2	17.4	0.0	233.6	16.0	31.3	403.7	280.8	122.4	7.1
2C047007	1985	142.1	110.4	48.8	26.3	0.0	222.9	16.7	15.5	326.8	255.2	73.0	6.9
2C047010L	1985	70.1	50.4	22.5	18.3	0.0	74.0	14.6	56.3	161.4	145.4	17.4	6.2
2C047010U	1985	72.1	50.0	21.8	18.4	0.0	72.3	13.8	60.9	162.4	147.4	17.5	6.2
2C057004	1985	76.4	93.1	16.8	17.4	0.0	169.7	16.3	7.9	203.6	193.2	7.7	5.9
2C066026L	1985	55.8	51.2	24.4	18.0	0.0	71.2	36.9	11.3	149.4	119.0	29.8	6.5
2C066027L	1985	26.9	36.8	20.0	14.9	0.0	56.9	16.3	3.0	98.7	76.0	22.3	6.3
2C066027U	1985	11.3	25.2	18.9	10.4	0.0	58.0	15.5	0.5	65.4	73.9	-8.3	5.1
2C066039L	1985	73.9	38.9	29.1	17.8	0.0	71.6	33.3	4.1	159.7	109.1	50.3	6.7
2C077022U	1985	44.4	42.7	32.0	11.9	0.0	51.0	36.3	2.6	131.1	89.7	40.7	6.6
BJ35	1999	87.9	38.6	32.8	6.6	0.0	48.2	12.0	86.2	165.6	146.7	20.2	6.3
BJ72	1999	19.7	12.6	25.9	6.5	0.0	33.8	11.1	5.3	65.2	50.6	14.4	6.1
BJ76	1999	30.7	19.9	35.5	9.1	0.0	26.0	14.3	7.0	94.4	46.5	48.6	6.7
BJ77	1999	24.7	17.1	31.1	8.5	0.0	22.6	10.2	3.2	81.5	35.9	44.5	6.7
BLFC	1991	12.2	27.7	20.3	24.3	0.0	51.1	18.3	0.6	84.9	69.9	15.5	6.2
CO01	1993	11.8	24.6	13.2	21.4	0.0	23.6	21.2	1.9	70.0	46.6	24.8	6.4
CO05	1993	54.6	54.6	13.5	30.8	0.0	76.6	21.5	3.5	154.0	102.2	51.8	6.7
CO06	1993	31.8	30.2	19.7	23.1	0.0	19.8	18.1	0.8	104.6	38.3	66.5	6.8
CO10	1993	54.5	63.0	14.3	32.4	0.0	83.2	21.0	2.5	163.4	107.2	57.1	6.8
DR	1994	26.0	46.7	24.2	42.5	0.0	105.9	26.6	4.4	138.6	136.1	2.9	5.6
DR01	1990	22.1	45.1	24.6	45.0	0.0	109.2	23.0	0.4	136.0	132.9	3.5	5.6
DS04	1994	35.1	30.0	9.0	6.0	0.0	116.6	11.5	7.3	79.9	135.6	-55.4	4.7
DS06	1994	27.1	24.6	9.5	4.5	0.0	111.7	11.5	7.3	65.6	130.6	-65.8	4.6
DS09	1994	37.0	23.0	9.3	5.0	0.0	104.9	9.5	3.2	74.5	117.9	-43.8	4.7
DS19	1994	53.9	26.6	8.7	5.3	0.0	96.6	11.0	5.9	94.6	113.7	-19.2	4.9
DS50	1994	37.1	18.7	8.9	4.1	0.0	72.7	8.2	4.0	68.6	85.1	-16.7	4.9
FN1	1994	85.3	80.9	30.6	14.9	0.0	195.4	11.5	8.1	212.0	214.7	-3.8	5.2
FN2	1994	87.9	66.9	21.0	18.0	0.0	156.9	12.2	29.6	194.1	198.3	-4.5	5.2
FN3	1994	79.0	62.0	14.3	14.6	0.0	104.6	14.2	53.5	169.6	172.0	-2.9	5.3
GS01	2000	49.1	23.7	22.0	8.5	0.0	41.5	12.5	41.3	103.5	95.1	7.9	5.9
GS02	2000	45.3	18.9	22.7	6.0	0.0	28.7	10.0	35.7	92.7	75.3	18.0	6.2
GS04	2000	99.0	49.8	41.3	7.2	0.0	76.1	12.3	40.5	197.2	128.4	69.8	6.8
GS05	2000	19.6	12.3	27.1	13.8	0.0	19.9	9.7	0.6	72.8	29.7	42.4	6.6
GS06	2000	67.1	29.3	44.4	10.4	0.0	39.6	12.8	3.9	151.3	56.9	94.6	7.0
GS07	2000	32.1	16.6	31.1	7.7	0.0	25.2	11.5	25.9	87.1	62.2	25.1	6.4
GS08	2000	32.1	17.0	30.7	8.1	0.0	16.8	11.9	23.1	87.5	52.1	36.3	6.6
LB01	1987	117.7	33.9	21.0	20.9	0.0	106.5	33.1	1.2	193.1	140.9	52.0	6.7
LEWF	1991	54.2	25.7	44.0	11.6	0.0	42.8	12.8	51.5	135.3	107.5	28.9	6.4
M037	1991	21.0	40.4	30.1	26.7	0.0	68.7	18.8	0.6	118.4	87.9	30.3	6.5
M038	1991	27.1	41.9	25.8	28.2	0.0	75.4	16.8	0.6	122.4	92.8	29.6	6.5
M039	1991	13.4	24.5	19.1	26.1	0.0	42.0	17.7	0.6	83.2	59.3	23.6	6.4
NFD	1994	94.5	54.8	73.5	10.1	0.0	99.4	28.0	29.8	233.0	157.1	76.9	6.9
NFDR	1990	87.8	50.7	74.4	9.5	0.0	98.7	28.9	40.3	222.9	168.0	54.7	6.7
OC02	1994	54.3	25.8	8.2	6.1	0.0	123.1	10.4	20.6	94.4	153.7	-58.4	4.7

Table I-5. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
OC05	1994	22.5	15.2	7.4	3.4	0.0	123.0	7.9	2.2	48.5	132.8	-84.6	4.6
OC08	1994	28.5	23.6	7.1	5.0	0.0	128.8	8.8	2.5	64.5	139.9	-76.1	4.6
OC09	1994	14.6	10.8	6.9	2.4	0.0	117.8	6.3	1.0	34.5	125.3	-90.5	4.6
OC31	1994	21.5	14.7	7.3	3.0	0.0	148.2	7.8	1.7	46.6	157.6	-110.8	4.6
OC32	1994	27.8	18.0	7.3	4.1	0.0	123.9	7.8	3.1	57.4	134.7	-77.3	4.6
OC35	1994	61.2	30.6	14.2	5.2	0.0	158.3	8.1	2.5	111.0	169.0	-58.1	4.7
OC79	1994	70.2	35.7	9.5	8.0	0.0	74.4	9.9	24.3	123.9	109.0	15.7	6.2
PAIN	1994	34.8	60.2	22.1	47.2	0.0	111.2	25.9	24.2	163.4	161.5	3.8	5.7
SP10	1992	63.5	61.2	26.0	26.4	0.0	93.8	32.2	2.0	176.7	128.1	48.6	6.7
SP39	1992	34.2	54.2	29.8	21.4	0.0	74.8	32.9	0.2	139.5	107.8	31.1	6.5
SP41	1993	70.7	70.2	39.7	29.0	0.0	69.7	31.6	6.0	210.1	106.9	102.8	7.0
STAN	1994	68.6	31.2	59.4	10.4	0.0	43.6	24.5	5.4	170.2	73.6	96.6	7.0
VA524S	1994	64.2	52.8	18.3	18.8	0.0	120.0	21.5	5.0	153.6	146.0	7.4	5.9
VA526S	1994	132.3	94.6	27.0	18.7	0.0	122.8	18.1	1.6	272.5	142.8	130.2	7.1
VA531S	1994	49.5	39.3	60.3	9.1	0.0	47.8	23.1	21.4	158.5	92.9	67.7	6.8
VA548S	1994	40.7	79.5	50.8	21.0	0.0	116.9	37.4	6.1	190.4	160.5	30.9	6.5
VA555S	1994	32.8	30.9	15.9	11.6	0.0	42.9	18.9	0.6	91.6	62.8	28.5	6.4
VA821S	1994	143.8	115.9	53.2	19.3	0.0	163.0	55.8	0.2	331.8	218.7	112.7	7.1
VT02	1990	55.4	25.1	43.6	13.9	0.0	47.6	12.3	38.2	137.4	98.3	39.0	6.6
VT05	1990	32.0	43.0	29.0	21.7	0.0	36.8	11.8	0.6	125.7	49.3	76.1	6.9
VT07	1990	58.2	28.0	17.8	8.2	0.0	82.0	13.5	14.2	112.9	109.4	3.6	5.6
VT08	1990	66.6	30.7	17.8	8.6	0.0	77.2	13.5	10.0	123.2	101.2	20.9	6.3
VT09	1990	47.7	28.2	15.0	8.9	0.0	69.1	13.6	3.4	100.1	85.8	14.2	6.1
VT10	1990	31.2	30.3	16.9	12.1	0.0	45.9	15.0	0.3	90.3	61.3	29.4	6.5
VT11	1990	31.8	31.9	13.5	11.7	0.0	35.5	13.5	2.5	88.9	50.7	36.7	6.6
VT12	1990	84.9	71.7	14.2	14.0	0.0	32.3	13.5	2.2	185.0	48.4	136.9	7.2
VT15	1990	28.7	25.5	15.5	11.8	0.0	30.6	13.2	0.6	81.8	44.6	37.4	6.6
VT18	1990	69.0	54.9	28.5	17.8	0.0	80.2	11.5	18.0	170.3	109.9	59.7	6.8
VT19	1990	73.1	59.5	25.1	19.7	0.0	69.6	12.8	36.1	177.9	118.3	59.0	6.8
VT20	1990	125.5	52.2	22.5	14.3	0.0	83.5	17.1	0.4	214.5	101.0	113.1	7.1
VT24	1990	47.3	25.5	16.9	12.5	0.0	53.0	16.9	0.9	102.8	71.0	32.1	6.5
VT25	1990	21.8	24.0	13.7	9.2	0.0	41.0	15.6	0.3	68.7	57.2	11.1	6.0
VT26	1990	49.7	36.0	14.7	13.3	0.0	91.6	22.8	1.4	113.6	115.0	-0.2	5.4
VT28	1990	22.4	23.8	12.4	9.0	0.0	41.2	14.5	0.3	67.5	55.8	11.4	6.0
VT29	1990	19.8	20.9	11.2	8.5	0.0	34.3	15.4	1.1	60.7	50.1	10.0	6.0
VT31	1990	15.4	21.8	13.4	8.0	0.0	41.1	13.5	0.3	58.8	55.2	4.2	5.7
VT32	1990	58.2	34.7	12.2	9.9	0.0	76.3	19.0	15.3	114.9	111.1	3.6	5.6
VT34	1990	66.1	38.7	18.6	12.1	0.0	69.2	16.3	0.3	135.1	85.7	49.9	6.7
VT35	1990	25.8	48.2	24.0	44.7	0.0	111.1	22.9	0.8	143.0	134.9	7.8	5.9
VT36	1990	23.9	40.3	21.6	25.9	0.0	88.9	22.1	0.3	112.0	112.4	0.8	5.5
VT37	1990	39.4	46.9	23.8	17.4	0.0	72.8	15.3	4.5	128.1	92.4	35.7	6.5
VT38	1990	82.3	78.8	36.4	20.2	0.0	128.9	15.6	1.0	217.5	145.1	72.2	6.9
VT39	1990	11.7	20.1	16.3	14.1	0.0	54.8	14.7	0.3	62.3	69.8	-6.8	5.1
VT41	1990	24.6	29.6	17.4	17.3	0.0	64.4	15.4	0.3	89.3	80.5	8.7	5.9
VT46	1990	65.4	22.1	56.0	5.4	0.0	39.1	22.7	4.3	149.1	66.0	82.9	6.9
VT48	1990	23.1	39.4	31.2	35.7	0.0	56.8	16.6	0.6	129.7	73.7	55.8	6.8
VT49	1990	48.9	68.2	21.0	16.7	0.0	123.0	18.9	3.6	155.2	145.7	9.1	5.9

Table I-5. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
VT50	1990	31.2	67.5	18.7	19.3	0.0	140.5	21.8	12.2	136.5	174.8	-37.6	4.8
VT53	1990	28.4	46.3	27.0	37.9	0.0	98.4	21.5	0.5	138.8	120.5	18.0	6.2
VT54	1990	79.8	77.5	33.2	21.9	0.0	130.4	14.8	13.7	213.1	158.6	53.0	6.7
VT55	1990	94.1	117.2	68.4	22.9	0.0	164.1	19.7	21.0	301.9	204.9	97.9	7.0
VT56	1990	21.6	40.7	15.5	18.6	0.0	77.0	14.7	0.9	97.1	92.2	4.2	5.7
VT57	1990	51.7	68.1	27.6	21.4	0.0	112.5	17.1	9.0	168.9	138.5	29.7	6.5
VT58	1990	55.6	34.4	60.6	9.6	0.0	40.0	23.4	8.7	160.0	71.8	87.7	7.0
VT59	1990	59.7	24.3	61.0	9.2	0.0	41.1	23.6	3.7	154.9	68.1	86.4	6.9
VT62	1990	59.0	41.2	63.2	10.3	0.0	39.3	24.3	5.4	173.6	69.0	103.8	7.0
VT66	1990	113.4	88.1	59.1	4.9	0.0	53.1	31.6	39.3	266.0	124.4	140.8	7.2
VT68	1990	13.8	19.5	15.3	12.7	0.0	53.5	14.1	0.3	61.0	68.2	-6.4	5.1
VT70	1990	19.7	21.9	16.9	19.9	0.0	46.3	14.0	0.3	78.3	61.0	18.0	6.2
VT72	1990	18.5	23.7	15.8	20.7	0.0	66.2	15.3	0.3	78.7	81.5	-2.6	5.3
VT73	1990	30.4	36.3	21.3	25.1	0.0	74.3	15.6	0.5	113.5	90.3	23.0	6.3
VT74	1990	21.6	25.5	15.5	15.6	0.0	58.5	15.3	0.3	78.9	73.6	4.7	5.7
VT75	1990	109.6	86.5	54.2	4.5	0.0	52.8	27.4	41.3	254.2	121.6	133.1	7.1
VT76	1990	15.3	30.4	22.8	27.9	0.0	59.7	17.6	0.3	96.2	77.1	19.2	6.3
VT77	1990	23.3	40.8	33.4	28.5	0.0	57.3	18.1	0.2	126.2	76.1	50.3	6.7
VT78	1990	23.6	22.9	10.5	6.8	0.0	56.0	10.1	5.6	64.5	71.8	-7.7	5.1
WOR	1994	35.4	58.1	21.3	40.3	0.0	74.5	24.0	33.7	154.5	132.0	23.6	6.4
WOR1	1990	28.2	48.9	22.2	38.2	0.0	82.9	21.4	6.3	137.9	111.0	27.0	6.4
WV523S	1994	51.3	26.2	8.3	9.5	0.0	94.9	15.0	27.7	95.9	137.7	-43.3	4.7
WV531S	1994	104.4	24.1	9.2	6.6	0.0	120.0	13.2	8.5	143.9	141.4	3.1	5.6
WV547S	1994	141.4	102.9	39.5	16.3	0.0	200.3	22.5	24.3	300.5	247.8	52.7	6.7
WV548S	1994	70.6	53.5	10.2	12.4	0.0	108.0	15.4	33.1	146.4	156.3	-8.3	5.1
WV769S	1994	122.8	87.2	10.5	16.6	0.0	170.4	14.4	20.7	237.2	204.9	32.1	6.5
WV770S	1994	138.1	109.8	56.2	29.9	0.0	208.0	18.5	12.3	334.0	239.3	94.5	7.0
WV771S	1994	191.2	96.6	49.1	18.9	0.0	170.8	26.8	18.9	354.9	216.0	138.3	7.1
WV785S	1994	66.1	65.9	26.1	17.2	0.0	164.3	32.0	0.2	176.1	196.7	-21.0	4.9
WV788S	1994	71.5	39.4	9.1	10.6	0.0	96.0	12.0	16.3	130.2	124.6	5.9	5.8
WV796S	1994	80.4	33.6	10.2	4.8	0.0	84.8	13.1	0.2	129.3	98.4	31.3	6.5

Table I-6. The differences between simulated and observed (sim-obs) stream variable values resulting from the calibration of each SAMI site (simulated values are median values of multiple calibrations at each site). The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
	Average	0.07	-0.01	-0.12	-0.06	-0.44	-0.05	0.06	0.82	-0.54	0.83	-1.37	0.15
	Std. Dev.	0.38	0.24	0.32	0.17	0.75	0.16	1.13	1.75	0.94	2.24	2.68	0.30
	Maximum	2.06	0.82	2.50	0.50	0.00	0.58	6.11	8.19	1.71	8.75	10.26	2.30
	Minimum	-0.90	-0.59	-1.00	-0.56	-5.98	-0.53	-7.08	-9.60	-5.74	-9.40	-13.21	-0.87
Site ID	**Calibration Year**	**Ca**	**Mg**	**Na**	**K**	**NH_4**	**SO_4**	**Cl**	**NO_3**	**SBC**	**SAA**	**Calk**	**pH**
2A068015U	1985	-0.16	0.22	0.13	-0.08	-1.10	-0.21	1.21	-0.44	-0.28	0.75	-2.07	0.15
2A07701	1985	0.08	0.14	-0.03	-0.13	-0.31	-0.17	0.19	-0.12	-0.17	0.31	-0.41	-0.05
2A07805	1985	-0.27	-0.13	0.03	0.03	-2.05	-0.13	-0.35	-0.12	-2.34	-0.97	-1.94	-0.03
2A07806	1985	0.38	-0.09	0.01	0.18	-0.79	0.03	0.36	0.11	0.36	-0.44	-0.66	0.05
2A07810L	1985	0.08	0.06	0.14	0.17	-0.75	-0.05	-0.51	0.16	-0.29	-0.09	-1.03	-0.07
2A07810U	1985	-0.23	-0.19	-0.06	-0.36	-0.88	0.06	-0.24	-0.06	-1.29	0.35	-2.27	0.04
2A07811	1985	0.32	0.12	-0.22	-0.08	-0.61	-0.09	-0.03	-0.82	0.09	-0.90	2.83	0.07
2A07812	1985	0.13	0.11	0.03	-0.04	-0.86	-0.09	0.07	0.10	-0.74	-0.06	-0.74	-0.02
2A07816	1985	-0.53	-0.42	-0.33	-0.19	-0.63	0.35	0.33	0.53	-1.90	1.21	-3.52	-0.07
2A07817	1985	0.23	0.22	-0.06	0.06	-0.52	0.00	-0.16	0.32	-0.16	-0.19	-0.85	-0.01
2A07821	1985	0.48	0.09	0.10	0.04	-0.38	-0.18	0.76	-0.16	-0.02	0.42	-0.76	0.03
2A07823	1985	0.22	0.22	-0.19	-0.12	-0.72	-0.18	0.27	0.37	-0.36	0.74	-1.21	0.02
2A07828	1985	-0.23	0.52	0.31	0.12	-0.78	-0.13	-0.04	0.20	-0.45	-0.38	-0.45	-0.04
2A07829	1985	-0.39	-0.06	0.09	-0.03	-2.85	-0.12	0.36	0.23	-2.85	-0.03	-2.27	-0.05
2A07834	1985	-0.45	0.05	-0.08	0.14	-0.69	-0.20	-0.05	0.18	-0.73	-0.15	-0.40	-0.05
2A07835	1985	0.21	-0.09	-0.11	-0.20	-0.47	0.14	0.62	0.20	-0.75	0.67	-1.98	-0.02
2A07882	1985	-0.15	-0.12	-0.04	-0.14	-0.61	0.04	0.13	0.31	-0.97	-0.09	-1.79	-0.03
2A08802	1985	0.07	0.05	-0.01	-0.12	-0.94	-0.02	0.45	0.10	-0.63	0.58	0.39	0.43
2A08804	1985	0.32	0.56	0.06	0.22	-0.94	-0.21	-0.13	-0.05	0.20	0.08	-1.15	-0.03
2A08805	1985	0.29	0.26	-0.03	-0.22	-0.48	-0.01	-0.08	-0.04	0.26	-0.51	0.09	0.16
2A08810	1985	0.31	-0.11	-0.16	0.00	-0.56	-0.15	0.43	0.19	-0.61	0.47	-1.09	-0.01
2A08901	1985	-0.04	-0.16	-0.13	0.04	-1.32	0.00	0.91	0.70	-1.57	1.61	-2.62	-0.05
2B041020L	1985	0.39	0.02	-0.65	-0.40	-0.67	-0.17	1.21	0.68	-0.97	1.55	-1.65	0.32
2B041049U	1985	0.53	-0.27	-0.79	-0.27	-0.50	-0.24	2.43	0.35	-1.12	2.41	-4.36	-0.04
2B047032	1985	-0.15	0.00	-0.14	0.30	-0.89	0.31	0.38	5.29	-0.87	4.95	-5.26	0.04
2B047044U	1985	0.12	0.25	-0.15	0.08	-1.01	-0.13	0.16	1.50	-1.47	1.69	-2.07	0.21
2B047076L	1985	0.87	-0.21	-0.32	-0.42	-0.17	-0.04	-0.35	0.25	-0.50	0.22	-0.77	0.32
2B047076U	1985	0.14	0.27	0.15	0.06	0.00	0.26	-0.10	0.70	0.25	1.05	-1.00	0.14
2B058015U	1985	-0.09	0.15	0.06	0.08	0.00	-0.01	-0.66	0.20	0.71	-0.59	0.21	0.16
2C041033U	1985	-0.13	0.06	-0.11	0.24	-0.67	-0.05	-0.83	2.71	0.03	1.85	-2.15	0.29
2C041039	1985	-0.90	-0.03	-0.41	0.07	-0.81	-0.30	0.47	3.53	-1.67	3.69	-5.00	0.07
2C041040	1985	0.02	0.06	-0.37	0.25	-1.44	0.31	-0.15	3.08	-1.86	3.60	-4.99	0.10
2C041043U	1985	-0.31	-0.15	-0.60	-0.24	-2.00	-0.05	0.17	3.61	-3.28	4.49	-5.76	0.55
2C041045	1985	0.04	0.07	-0.29	-0.30	-1.12	0.13	1.81	3.07	-1.03	4.96	-5.97	0.12
2C041051	1985	0.12	0.17	-0.40	-0.18	-0.86	0.13	0.31	0.47	-0.84	1.30	-1.80	-0.01
2C046013L	1985	0.36	-0.06	-0.40	0.01	-0.71	-0.16	0.36	2.18	-0.65	1.60	-3.50	0.08
2C046033	1985	0.13	0.05	-0.02	-0.07	-0.87	-0.30	0.00	4.03	-0.14	4.46	-4.97	-0.64
2C046034	1985	0.06	0.11	-0.19	-0.07	-0.82	-0.18	-0.15	3.07	-0.87	2.74	-3.65	-0.50
2C046043L	1985	0.21	0.18	0.23	-0.05	-0.81	-0.02	1.05	3.00	-0.95	4.61	-5.03	-0.14

Table I-6. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
2C046043U	1985	-0.07	-0.11	-0.38	-0.30	-0.88	-0.10	2.42	4.62	-1.08	7.00	-9.55	-0.41
2C046050	1985	0.19	0.37	0.02	-0.04	-5.98	0.05	5.11	2.14	-5.74	8.75	-13.21	0.23
2C046053L	1985	-0.03	0.16	0.09	-0.36	-0.66	0.58	0.45	3.74	-1.21	4.08	-6.03	-0.02
2C046062L	1985	0.06	0.82	-0.39	-0.18	-1.91	-0.40	1.06	4.65	-1.41	5.15	-7.06	0.14
2C047007	1985	0.35	0.55	-0.33	-0.14	-1.33	0.16	0.85	2.14	-1.66	3.22	-3.58	0.09
2C047010L	1985	0.01	0.26	-0.01	0.29	-1.27	-0.17	-0.45	3.43	-0.63	3.27	-2.56	-0.31
2C047010U	1985	0.26	0.14	-0.42	-0.13	-0.94	-0.29	0.25	6.37	-1.07	6.81	-5.37	-0.27
2C057004	1985	0.59	0.38	-0.26	0.50	-0.72	0.43	0.20	1.01	0.39	0.92	-3.25	0.14
2C066026L	1985	-0.12	-0.09	0.03	-0.17	-1.26	-0.25	-0.33	-0.66	-1.60	-1.55	-0.59	0.28
2C066027L	1985	-0.10	-0.54	-0.20	-0.20	-2.02	0.06	-0.06	-0.05	-2.94	-0.20	-3.16	0.45
2C066027U	1985	2.06	0.05	0.08	0.06	-0.91	0.32	-0.59	0.12	0.86	-0.17	1.23	-0.02
2C066039L	1985	0.08	-0.22	0.12	-0.08	-3.38	-0.19	-0.59	-0.09	-3.50	-0.79	-3.06	0.35
2C077022U	1985	-0.21	-0.28	-0.13	-0.05	-1.17	-0.19	-0.09	0.17	-1.63	-0.38	-2.06	0.29
BJ35	1999	-0.06	-0.11	-0.03	-0.01	0.00	-0.14	0.12	-9.60	-0.40	-9.40	10.26	0.89
BJ72	1999	-0.01	-0.31	0.09	-0.15	0.00	-0.03	0.86	-0.22	0.18	1.07	-1.11	0.45
BJ76	1999	-0.09	0.05	0.13	-0.07	0.00	-0.11	0.56	0.17	-0.83	-0.20	0.15	0.28
BJ77	1999	0.74	0.25	0.16	0.26	0.00	-0.13	-1.16	0.02	1.56	-1.30	1.88	0.30
BLFC	1991	0.68	-0.14	-0.28	-0.09	0.00	-0.19	-0.41	0.23	0.52	-0.44	1.47	0.18
CO01	1993	0.60	0.13	-0.12	0.08	0.00	0.05	-1.55	-0.02	-0.36	-1.48	2.60	-0.09
CO05	1993	0.24	-0.51	0.95	0.15	0.00	-0.17	-7.08	-1.09	1.22	-7.76	9.01	0.19
CO06	1993	0.58	0.06	-0.09	0.42	0.00	0.05	0.41	0.15	0.81	0.12	0.84	0.44
CO10	1993	-0.10	0.00	2.50	0.10	0.00	0.03	-5.66	-0.57	1.71	-5.74	8.31	0.29
DR	1994	1.71	-0.41	0.00	-0.46	0.00	-0.09	1.22	0.51	0.08	0.93	-0.49	0.19
DR01	1990	-0.27	0.30	0.00	0.27	0.00	-0.03	-0.32	0.27	-0.35	0.25	-0.17	0.16
DS04	1994	-0.12	0.00	-0.01	-0.11	-1.16	-0.28	-0.16	0.57	-1.58	0.37	-1.63	0.41
DS06	1994	0.42	-0.04	-0.07	-0.12	-1.27	0.07	-0.06	0.74	-1.20	0.82	-2.80	0.45
DS09	1994	-0.10	-0.15	0.01	-0.10	-1.22	-0.01	-0.48	0.35	-1.31	0.17	-1.93	0.35
DS19	1994	-0.05	0.02	-0.03	-0.01	-1.16	-0.14	-0.33	0.45	-1.01	0.17	-1.25	0.24
DS50	1994	-0.04	-0.10	0.12	-0.05	-1.27	-0.11	-0.10	0.38	-1.47	0.44	-2.07	0.46
FN1	1994	-0.56	0.08	-0.72	-0.56	0.00	0.06	-0.25	0.40	-1.52	-0.09	-2.49	-0.71
FN2	1994	-0.34	0.07	-0.05	0.03	0.00	-0.03	-0.29	0.13	-0.09	-0.54	0.27	-0.87
FN3	1994	0.21	-0.10	-0.18	0.06	-0.26	-0.16	0.09	1.74	-0.51	1.28	-2.29	-0.55
GS01	2000	-0.32	-0.04	-0.06	-0.03	0.00	0.09	0.14	-1.24	-0.32	-1.29	0.43	0.00
GS02	2000	0.31	0.51	-0.14	0.22	0.00	0.25	-0.03	-1.45	0.59	-0.34	1.54	0.10
GS04	2000	0.19	-0.05	-0.05	-0.08	0.00	0.08	0.07	-1.38	-0.12	-1.74	2.58	0.14
GS05	2000	-0.01	0.25	-0.06	0.04	0.00	-0.01	0.16	0.26	0.29	0.02	-0.40	0.47
GS06	2000	0.09	0.04	-0.12	-0.05	0.00	-0.45	0.03	0.04	0.11	0.13	0.06	0.65
GS07	2000	-0.26	-0.13	-0.13	0.08	0.00	-0.12	0.06	-0.70	-0.78	-1.12	0.59	0.06
GS08	2000	0.69	0.08	-0.04	0.07	0.00	-0.08	-0.06	-0.93	0.47	-0.81	2.16	0.15
LB01	1987	-0.15	-0.26	-0.14	0.02	-1.33	0.02	-0.58	0.14	-2.20	-0.26	-2.07	0.26
LEWF	1991	-0.20	-0.17	-0.08	-0.25	0.00	-0.10	0.33	0.92	-0.83	1.53	-1.33	0.05
M037	1991	0.14	-0.45	-0.05	-0.31	0.00	-0.07	0.17	0.27	-0.46	0.17	-0.78	0.14
M038	1991	-0.22	-0.10	0.00	-0.11	0.00	-0.16	-0.04	0.22	-0.93	0.10	-1.06	0.12
M039	1991	0.19	-0.22	-0.31	-0.16	0.00	-0.06	0.25	0.25	-0.37	-0.47	-0.17	0.13
NFD	1994	0.33	-0.04	-0.24	-0.23	0.00	0.05	-0.16	1.24	-0.11	1.05	-0.21	0.35
NFDR	1990	-0.17	0.11	-0.65	-0.12	0.00	-0.04	-0.63	6.85	-0.25	6.36	-6.81	0.29
OC02	1994	0.23	-0.22	0.27	-0.12	-1.33	-0.04	0.19	1.38	-1.22	1.16	-1.42	0.07

Table I-6. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
OC05	1994	0.01	-0.08	0.01	0.06	-1.38	0.08	0.00	0.39	-1.34	0.12	-1.83	0.51
OC08	1994	-0.19	-0.09	0.02	0.00	-1.22	-0.09	-0.16	0.42	-1.23	0.05	-1.94	0.25
OC09	1994	0.35	0.06	0.08	0.05	-1.22	0.02	-0.15	0.22	-0.82	0.32	-0.87	0.48
OC31	1994	0.41	-0.20	-0.08	-0.14	-1.11	0.04	-0.04	0.30	-1.12	0.28	-1.20	0.47
OC32	1994	-0.17	-0.30	0.00	-0.11	-1.14	-0.11	0.08	0.38	-1.44	0.17	-1.68	0.38
OC35	1994	-0.09	0.16	-0.46	-0.03	-1.11	-0.04	0.07	0.39	-1.67	0.56	-2.41	0.22
OC79	1994	-0.22	-0.42	-0.13	-0.16	-1.05	-0.07	-0.05	1.08	-1.59	1.41	-2.23	0.13
PAIN	1994	0.68	0.26	-0.28	-0.11	0.00	-0.07	1.07	1.73	-0.41	2.97	-1.48	0.10
SP10	1992	0.10	0.40	-0.01	0.00	0.00	0.09	0.50	0.19	0.15	0.90	-0.73	0.44
SP39	1992	-0.03	-0.16	-0.06	-0.08	0.00	-0.05	-0.83	0.23	-0.42	-0.80	-0.20	-0.34
SP41	1993	-0.16	0.05	-0.07	-0.07	0.00	0.04	-0.48	-0.02	0.18	-0.90	0.72	2.30
STAN	1994	0.22	0.33	-0.22	-0.06	0.00	-0.04	0.02	0.45	0.85	0.48	0.38	0.37
VA524S	1994	0.27	0.19	-0.37	0.12	-0.60	0.03	0.52	0.44	-0.91	0.43	-1.52	0.39
VA526S	1994	0.06	-0.04	-0.39	-0.16	0.00	-0.17	0.12	0.25	-0.62	0.46	-0.60	0.07
VA531S	1994	-0.42	-0.18	-0.17	-0.07	0.00	-0.19	0.05	1.09	-0.60	1.62	-0.06	0.09
VA548S	1994	0.83	-0.26	-0.09	0.26	0.00	-0.07	-1.58	0.40	-0.94	-1.19	1.34	0.73
VA555S	1994	-0.13	-0.36	-0.21	-0.22	0.00	-0.08	-0.07	0.20	-0.50	0.42	-1.21	0.17
VA821S	1994	0.13	-0.11	-0.27	-0.14	0.00	0.00	1.82	0.21	-0.81	1.65	-2.94	0.01
VT02	1990	0.80	0.28	-0.25	0.21	0.00	-0.21	-0.06	-0.51	0.46	-0.50	0.78	0.10
VT05	1990	-0.06	-0.24	-0.13	0.02	0.00	-0.23	0.11	0.18	-0.42	0.25	-0.95	0.05
VT07	1990	0.08	-0.14	-0.26	-0.19	0.00	0.01	0.17	0.70	0.21	0.58	-0.31	0.50
VT08	1990	0.31	0.13	-0.07	-0.30	0.00	-0.53	-0.03	0.47	-0.32	0.33	-1.79	0.47
VT09	1990	-0.15	-0.31	-0.45	-0.01	0.00	-0.02	0.20	0.34	-0.61	0.20	-0.83	0.33
VT10	1990	-0.07	-0.17	-0.20	-0.18	0.00	0.00	-0.20	0.24	-0.82	0.09	-0.50	0.15
VT11	1990	-0.31	0.00	0.05	0.03	0.00	0.12	0.07	0.41	-0.26	-0.11	-1.61	0.37
VT12	1990	-0.02	-0.27	-0.24	-0.13	0.00	-0.12	-0.35	0.38	-0.49	0.30	-0.50	0.23
VT15	1990	-0.34	0.02	-0.08	-0.06	0.00	0.03	0.15	0.24	-0.08	0.61	-0.54	0.40
VT18	1990	-0.50	-0.59	-0.05	-0.21	0.00	0.03	-0.24	2.05	-1.12	2.11	-4.02	0.15
VT19	1990	-0.53	0.13	-0.26	0.13	0.00	-0.04	0.16	4.92	-0.04	4.74	-5.50	0.18
VT20	1990	-0.14	-0.29	0.01	-0.14	0.00	0.00	0.18	0.29	-0.59	0.46	-1.42	0.10
VT24	1990	-0.56	-0.33	0.01	-0.17	0.00	-0.13	-0.28	0.35	-0.48	0.20	-0.31	0.18
VT25	1990	-0.26	0.11	-0.27	-0.08	0.00	-0.10	-0.26	0.28	-0.50	0.16	-1.11	0.20
VT26	1990	-0.09	-0.37	-0.04	-0.03	0.00	-0.06	0.96	0.53	-0.73	0.72	-0.16	0.16
VT28	1990	0.03	-0.16	0.04	-0.19	0.00	-0.12	0.12	0.25	-0.36	0.08	-0.72	0.49
VT29	1990	0.21	0.40	-0.08	-0.13	0.00	-0.13	0.90	0.31	0.65	0.39	-0.22	0.52
VT31	1990	0.71	-0.07	-0.25	-0.01	0.00	0.04	-3.14	0.23	0.52	-2.53	3.70	0.51
VT32	1990	-0.04	0.09	0.04	-0.03	0.00	-0.15	-0.04	1.38	0.08	1.73	-1.86	0.29
VT34	1990	-0.03	0.16	-0.20	-0.11	0.00	-0.36	-0.46	0.24	-0.50	-0.59	0.63	0.07
VT35	1990	-0.10	0.03	-0.09	-0.17	0.00	-0.32	0.15	0.31	0.00	0.32	-0.66	-0.04
VT36	1990	0.14	-0.01	-0.15	-0.30	0.00	-0.19	-0.18	0.25	-0.16	1.00	0.02	0.00
VT37	1990	-0.24	-0.42	-0.28	-0.18	0.00	-0.02	0.23	0.84	-0.54	0.90	-1.40	0.14
VT38	1990	-0.57	-0.24	-0.50	-0.33	0.00	0.14	-0.11	0.32	-1.77	-0.02	-1.92	0.11
VT39	1990	0.35	0.00	-0.05	-0.31	0.00	-0.10	0.23	0.17	0.17	0.37	0.48	0.06
VT41	1990	-0.01	0.22	0.00	-0.26	0.00	0.00	0.29	0.19	0.28	0.86	-0.67	0.07
VT46	1990	0.25	0.07	-0.33	-0.18	0.00	-0.24	0.50	0.67	0.01	0.89	-1.00	0.23
VT48	1990	-0.13	-0.32	-0.47	-0.30	0.00	-0.05	0.11	0.24	-0.90	-0.03	-1.14	0.06
VT49	1990	-0.20	-0.05	-0.28	0.12	0.00	-0.30	-0.24	0.80	-0.02	0.49	-0.87	0.10

Table I-6. Continued.

Site ID	Calibration Year	Ca	Mg	Na	K	NH_4	SO_4	Cl	NO_3	SBC	SAA	Calk	pH
VT50	1990	0.24	0.18	0.12	-0.01	0.00	-0.11	-0.08	2.10	0.28	2.27	-1.26	-0.03
VT53	1990	0.76	-0.41	-0.38	-0.27	0.00	-0.18	-1.52	0.28	-1.13	-1.37	-0.09	0.13
VT54	1990	-0.54	-0.51	-0.71	-0.05	0.00	0.01	-0.91	1.36	-0.97	0.12	-2.62	0.25
VT55	1990	-0.04	-0.29	-0.39	-0.27	0.00	0.14	0.03	3.17	-1.78	3.42	-4.28	0.25
VT56	1990	-0.09	-0.09	-0.88	-0.20	0.00	0.09	0.46	0.30	-0.47	0.49	-1.70	0.01
VT57	1990	-0.53	-0.35	-0.64	-0.04	0.00	-0.06	-0.02	1.46	-1.45	1.27	-3.37	0.05
VT58	1990	-0.10	0.17	-0.13	0.06	0.00	-0.39	0.46	1.89	-0.20	1.65	-2.39	0.12
VT59	1990	0.30	0.02	-0.38	-0.20	0.00	-0.03	0.01	0.88	0.43	0.53	-0.55	0.25
VT62	1990	-0.05	-0.07	0.00	0.05	0.00	-0.04	-0.20	1.13	-0.09	0.88	-1.71	0.36
VT66	1990	0.06	0.06	0.09	-0.07	0.00	-0.23	-0.32	7.54	0.78	7.41	-7.45	0.26
VT68	1990	-0.02	0.26	0.00	0.06	0.00	-0.06	-0.18	0.18	0.04	0.24	0.57	0.04
VT70	1990	-0.02	0.06	0.00	-0.01	0.00	-0.15	-0.18	0.16	-0.12	0.27	0.28	0.34
VT72	1990	-0.19	0.08	0.02	0.10	0.00	0.05	0.28	0.19	-0.05	0.21	-0.08	0.15
VT73	1990	0.22	0.05	-0.47	-0.11	0.00	0.03	-0.43	0.21	-0.05	-0.34	0.08	0.25
VT74	1990	-0.02	-0.06	-0.37	-0.04	0.00	-0.01	0.52	0.19	0.14	0.17	-0.67	0.08
VT75	1990	0.15	0.09	0.33	-0.13	0.00	-0.28	-0.07	8.19	-0.15	7.90	-7.55	0.40
VT76	1990	1.26	-0.51	-0.29	-0.15	0.00	0.00	-0.29	0.24	0.21	-0.51	0.86	0.25
VT77	1990	-0.44	-0.10	-0.14	0.04	0.00	-0.07	0.33	0.24	-0.42	0.90	-1.14	0.03
VT78	1990	0.02	0.05	-0.02	0.06	0.00	-0.06	-0.07	0.24	0.79	0.22	0.24	0.03
WOR	1994	-0.17	0.23	-0.20	-0.14	0.00	-0.28	0.49	1.64	-0.81	1.72	-1.46	0.42
WOR1	1990	-0.10	-0.25	-0.40	-0.12	0.00	-0.15	-0.05	0.82	-0.52	1.01	-1.38	0.40
WV523S	1994	-0.12	-0.13	0.00	-0.05	0.00	-0.13	0.02	1.01	0.39	0.99	-2.07	-0.11
WV531S	1994	0.12	0.21	-0.44	0.18	0.00	-0.05	0.24	0.45	-0.34	0.39	-0.07	0.15
WV547S	1994	0.24	0.06	-1.00	0.15	0.00	0.31	0.50	1.52	-0.12	3.02	-3.08	-0.25
WV548S	1994	0.19	-0.01	-0.21	-0.08	0.00	0.00	0.43	2.01	-0.40	2.20	-1.00	-0.26
WV769S	1994	0.48	0.01	0.05	-0.05	0.00	0.40	0.38	1.18	0.69	1.36	-0.89	-0.09
WV770S	1994	-0.08	0.37	-0.35	-0.03	0.00	-0.03	-0.54	0.11	0.02	0.05	-0.30	0.12
WV771S	1994	-0.43	0.36	0.38	-0.34	0.00	-0.21	0.75	1.42	-0.77	1.51	-2.87	0.14
WV785S	1994	0.21	0.13	-0.40	0.10	0.00	0.27	-0.04	0.21	0.80	0.73	-0.32	-0.02
WV788S	1994	0.12	-0.06	0.04	-0.07	0.00	0.02	-0.03	0.56	-0.46	0.93	-1.15	-0.08
WV796S	1994	0.06	-0.09	0.15	-0.07	0.00	-0.20	6.11	0.17	0.41	6.36	-5.65	0.31

Table I-7. The observed soil variable values used for calibration of each SAMI site. The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
	Average	4.1	3.0	0.4	4.5	12.0	4.8
	Std. Dev.	3.6	2.5	1.0	8.6	10.4	0.3
	Maximum	18.1	20.1	9.1	49.5	55.8	5.2
	Minimum	1.3	0.8	0.1	0.7	3.8	3.9
Site ID	**Calibration Year**	**Exchg Ca %**	**Exchg Mg %**	**Exchg Na %**	**Exchg K %**	**BS %**	**pH**
2A068015U	1985	4.3	2.4	0.4	1.8	8.9	5.1
2A07701	1985	3.7	2.5	0.4	1.8	8.3	5.1
2A07805	1985	4.2	2.5	0.4	1.7	8.8	5.1
2A07806	1985	4.5	4.3	0.4	2.3	11.4	5.2
2A07810L	1985	2.9	1.2	0.2	2.3	6.6	4.9
2A07810U	1985	2.9	1.2	0.2	2.3	6.6	4.9
2A07811	1985	4.3	2.4	0.4	1.8	8.9	5.1
2A07812	1985	3.3	2.3	0.4	1.7	7.6	5.0
2A07816	1985	2.4	1.8	0.5	1.5	6.0	4.9
2A07817	1985	3.1	2.1	0.4	1.7	7.3	5.0
2A07821	1985	3.4	4.1	0.4	2.4	10.2	5.2
2A07823	1985	3.1	2.2	0.4	1.7	7.4	5.0
2A07828	1985	3.8	3.1	0.4	2.0	9.3	5.1
2A07829	1985	3.2	3.8	0.4	2.3	9.6	5.2
2A07834	1985	3.5	3.7	0.4	2.3	9.8	5.2
2A07835	1985	5.0	4.7	0.4	2.4	12.5	5.2
2A07882	1985	3.0	2.9	0.4	1.9	8.3	5.1
2A08802	1985	5.1	4.3	0.4	1.9	11.7	5.2
2A08804	1985	2.3	4.0	0.4	2.5	9.2	5.2
2A08805	1985	2.7	4.3	0.4	2.5	9.8	5.2
2A08810	1985	2.4	4.4	0.4	2.4	9.5	5.2
2A08901	1985	3.0	4.2	0.4	2.4	10.0	5.2
2B041020L	1985	8.5	3.4	0.2	1.6	13.6	5.0
2B041049U	1985	1.4	0.9	0.4	3.0	5.8	4.4
2B047032	1985	5.4	2.5	0.1	1.4	9.4	5.0
2B047044U	1985	5.4	2.5	0.1	1.4	9.4	5.0
2B047076L	1985	1.8	1.7	0.4	1.9	5.7	4.7
2B047076U	1985	1.8	1.7	0.4	1.9	5.7	4.7
2B058015U	1985	1.5	1.7	1.7	6.0	10.9	4.5
2C041033U	1985	7.5	2.4	0.1	1.5	11.6	5.0
2C041039	1985	8.1	2.8	0.1	1.5	12.5	5.0
2C041040	1985	7.5	2.4	0.1	1.5	11.6	5.0
2C041043U	1985	8.1	2.8	0.1	1.5	12.5	5.0
2C041045	1985	7.4	2.6	0.1	1.5	11.7	5.0
2C041051	1985	5.0	3.7	0.2	1.5	10.3	5.0

Table I-7. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
2C046013L	1985	3.5	2.1	0.1	1.4	7.2	5.0
2C046033	1985	7.0	3.1	0.1	1.4	11.7	5.0
2C046034	1985	4.6	2.7	0.1	1.4	8.9	5.0
2C046043L	1985	5.0	3.4	0.1	1.5	10.1	5.0
2C046043U	1985	7.0	3.1	0.1	1.4	11.7	5.0
2C046050	1985	3.5	2.1	0.1	1.4	7.2	5.0
2C046053L	1985	3.5	2.1	0.1	1.4	7.2	5.0
2C046062L	1985	8.5	3.4	0.2	1.6	13.6	5.0
2C047007	1985	8.5	3.4	0.2	1.6	13.6	5.0
2C047010L	1985	7.5	2.4	0.1	1.5	11.6	5.0
2C047010U	1985	7.5	2.4	0.1	1.5	11.6	5.0
2C057004	1985	5.0	3.4	0.1	1.5	10.1	5.0
2C066026L	1985	2.6	4.2	0.5	36.7	43.9	4.7
2C066027L	1985	1.3	1.2	0.2	1.5	4.3	3.9
2C066027U	1985	3.3	1.9	0.4	4.1	9.6	4.5
2C066039L	1985	2.6	4.2	0.5	36.7	43.9	4.7
2C077022U	1985	2.2	4.2	0.5	36.8	43.7	4.7
BJ35	1999	1.3	1.5	0.2	1.9	4.8	4.4
BJ72	1999	1.3	1.2	0.2	1.5	4.3	3.9
BJ76	1999	3.1	2.1	0.4	1.7	7.3	5.0
BJ77	1999	3.5	3.7	0.4	2.3	9.8	5.2
BLFC	1991	1.5	1.7	1.7	6.0	10.9	4.5
CO01	1993	3.0	2.7	0.5	49.5	55.8	4.7
CO05	1993	2.6	4.2	0.5	36.7	43.9	4.7
CO06	1993	3.6	2.9	0.5	44.2	51.2	4.7
CO10	1993	2.2	4.2	0.5	36.8	43.7	4.7
DR	1994	1.7	1.6	0.3	1.9	5.5	4.7
DR01	1990	2.2	2.1	0.2	2.0	6.4	4.7
DS04	1994	2.1	1.1	0.4	2.7	6.3	4.3
DS06	1994	2.1	1.1	0.4	2.7	6.3	4.3
DS09	1994	2.1	1.1	0.4	2.7	6.3	4.3
DS19	1994	2.1	1.1	0.4	2.7	6.3	4.3
DS50	1994	2.1	1.1	0.4	2.7	6.3	4.3
FN1	1994	3.3	1.9	0.4	4.1	9.6	4.5
FN2	1994	3.3	1.9	0.4	4.1	9.6	4.5
FN3	1994	3.3	1.9	0.4	4.1	9.6	4.5
GS01	2000	1.3	1.5	0.2	1.9	4.8	4.4
GS02	2000	1.3	1.2	0.2	1.5	4.3	3.9
GS04	2000	1.3	1.5	0.2	1.9	4.8	4.4
GS05	2000	2.1	0.8	0.2	0.7	3.8	4.7
GS06	2000	2.9	1.2	0.2	2.3	6.6	4.9
GS07	2000	18.1	8.7	9.1	5.4	41.3	4.7
GS08	2000	18.1	8.7	9.1	5.4	41.3	4.7

Table I-7. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
LB01	1987	7.6	5.5	1.3	7.0	21.4	4.9
LEWF	1991	7.5	2.3	1.3	5.9	17.0	4.5
M037	1991	1.5	1.7	1.7	6.0	10.9	4.5
M038	1991	1.5	1.7	1.7	6.0	10.9	4.5
M039	1991	1.5	1.7	1.7	6.0	10.9	4.5
NFD	1994	3.1	4.8	0.2	2.1	10.2	5.0
NFDR	1990	14.1	7.3	0.2	2.9	24.4	5.2
OC02	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC05	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC08	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC09	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC31	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC32	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC35	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC79	1994	1.4	0.9	0.4	3.0	5.8	4.4
PAIN	1994	1.7	1.6	0.3	1.9	5.5	4.7
SP10	1992	2.0	2.7	0.4	34.1	39.3	4.9
SP39	1992	2.7	2.0	0.4	27.4	32.5	4.7
SP41	1993	2.1	2.9	0.5	35.1	40.5	4.9
STAN	1994	11.3	7.0	0.2	2.9	21.5	5.2
VA524S	1994	5.0	3.4	0.1	1.5	10.1	5.0
VA526S	1994	3.5	2.1	0.1	1.4	7.2	5.0
VA531S	1994	3.1	4.8	0.2	2.1	10.2	5.0
VA548S	1994	5.4	2.5	0.1	1.4	9.4	5.0
VA555S	1994	1.5	1.7	1.7	6.0	10.9	4.5
VA821S	1994	3.5	2.1	0.1	1.4	7.2	5.0
VT02	1990	14.1	7.3	0.2	2.9	24.4	5.2
VT05	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT07	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT08	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT09	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT10	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT11	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT12	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT15	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT18	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT19	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT20	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT24	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT25	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT26	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT28	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT29	1990	2.2	2.1	0.2	2.0	6.4	4.7

Table I-7. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
VT31	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT32	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT34	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT35	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT36	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT37	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT38	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT39	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT41	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT46	1990	14.1	7.3	0.2	2.9	24.4	5.2
VT48	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT49	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT50	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT53	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT54	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT55	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT56	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT57	1990	3.8	5.7	0.2	2.9	12.5	4.6
VT58	1990	14.1	7.3	0.2	2.9	24.4	5.2
VT59	1990	14.1	7.3	0.2	2.9	24.4	5.2
VT62	1990	14.1	7.3	0.2	2.9	24.4	5.2
VT66	1990	17.7	20.1	0.3	0.8	39.0	5.2
VT68	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT70	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT72	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT73	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT74	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT75	1990	17.7	20.1	0.3	0.8	39.0	5.2
VT76	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT77	1990	2.2	2.1	0.2	2.0	6.4	4.7
VT78	1990	2.2	2.1	0.2	2.0	6.4	4.7
WOR	1994	1.8	1.7	0.4	1.9	5.7	4.7
WOR1	1990	2.2	2.1	0.2	2.0	6.4	4.7
WV523S	1994	2.1	1.1	0.4	2.7	6.3	4.3
WV531S	1994	7.0	3.1	0.1	1.4	11.7	5.0
WV547S	1994	3.5	2.1	0.1	1.4	7.2	5.0
WV548S	1994	4.6	2.7	0.1	1.4	8.9	5.0
WV769S	1994	7.5	2.4	0.1	1.5	11.6	5.0
WV770S	1994	8.5	3.4	0.2	1.6	13.6	5.0
WV771S	1994	7.4	2.6	0.1	1.5	11.7	5.0
WV785S	1994	4.6	2.7	0.1	1.4	8.9	5.0
WV788S	1994	5.0	3.4	0.1	1.5	10.1	5.0
WV796S	1994	8.1	2.8	0.1	1.5	12.5	5.0

Table I-8. The simulated soil variable values resulting from the calibration of each SAMI site (median values of multiple calibrations at each site). The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
	Average	4.1	3.0	0.5	4.5	12.0	4.7
	Std. Dev.	3.6	2.5	1.0	8.6	10.4	0.2
	Maximum	18.1	20.1	9.2	49.5	55.7	5.3
	Minimum	1.2	0.8	0.1	0.7	3.8	4.4
Site ID	**Calibration Year**	**Exchg Ca %**	**Exchg Mg %**	**Exchg Na %**	**Exchg K %**	**BS %**	**pH**
2A068015U	1985	4.3	2.4	0.4	1.8	8.9	4.8
2A07701	1985	3.7	2.5	0.4	1.8	8.3	4.9
2A07805	1985	4.2	2.5	0.4	1.7	8.8	4.9
2A07806	1985	4.5	4.3	0.4	2.2	11.4	4.7
2A07810L	1985	2.9	1.2	0.2	2.3	6.5	4.8
2A07810U	1985	3.0	1.1	0.2	2.3	6.6	4.8
2A07811	1985	4.3	2.4	0.5	1.8	8.9	4.8
2A07812	1985	3.3	2.3	0.4	1.7	7.6	4.9
2A07816	1985	2.3	1.8	0.5	1.5	6.0	4.9
2A07817	1985	3.1	2.1	0.4	1.7	7.2	4.7
2A07821	1985	3.4	4.0	0.4	2.4	10.2	5.2
2A07823	1985	3.1	2.2	0.4	1.7	7.3	4.7
2A07828	1985	3.8	3.1	0.4	2.0	9.2	5.0
2A07829	1985	3.2	3.7	0.4	2.3	9.6	5.2
2A07834	1985	3.4	3.7	0.4	2.3	9.7	5.0
2A07835	1985	5.0	4.7	0.4	2.4	12.5	5.2
2A07882	1985	3.0	2.9	0.4	1.9	8.2	5.1
2A08802	1985	5.1	4.3	0.4	1.9	11.6	5.1
2A08804	1985	2.3	4.0	0.3	2.5	9.0	4.8
2A08805	1985	2.7	4.3	0.4	2.5	9.8	5.0
2A08810	1985	2.4	4.3	0.4	2.4	9.5	5.1
2A08901	1985	3.0	4.2	0.4	2.4	9.9	5.2
2B041020L	1985	8.5	3.4	0.2	1.6	13.7	4.8
2B041049U	1985	1.3	1.1	0.5	3.0	5.8	4.5
2B047032	1985	5.4	2.4	0.2	1.4	9.3	5.0
2B047044U	1985	5.3	2.4	0.2	1.4	9.2	4.8
2B047076L	1985	1.8	1.7	0.4	1.9	5.7	4.6
2B047076U	1985	1.8	1.7	0.4	1.9	5.7	4.6
2B058015U	1985	1.5	1.7	1.7	6.1	10.9	4.5
2C041033U	1985	7.5	2.4	0.2	1.5	11.7	4.5
2C041039	1985	8.1	2.8	0.2	1.5	12.5	4.9
2C041040	1985	7.5	2.4	0.3	1.5	11.6	4.5
2C041043U	1985	8.1	2.8	0.2	1.5	12.5	4.8
2C041045	1985	7.4	2.6	0.2	1.5	11.7	4.9

Table I-8. Continued.

Site ID	**Calibration Year**	**Exchg Ca %**	**Exchg Mg %**	**Exchg Na %**	**Exchg K %**	**BS %**	**pH**
2C041051	1985	4.9	3.7	0.3	1.5	10.3	4.6

Table I-8. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
2C046013L	1985	3.5	2.1	0.2	1.5	7.2	4.9
2C046033	1985	7.0	3.1	0.1	1.4	11.6	4.7
2C046034	1985	4.6	2.7	0.2	1.4	8.9	4.5
2C046043L	1985	5.0	3.4	0.2	1.5	10.2	4.5
2C046043U	1985	7.0	3.1	0.2	1.4	11.7	4.5
2C046050	1985	3.5	2.1	0.2	1.4	7.2	4.5
2C046053L	1985	3.5	2.1	0.2	1.4	7.2	4.5
2C046062L	1985	8.5	3.4	0.2	1.6	13.6	5.1
2C047007	1985	8.5	3.3	0.2	1.5	13.5	5.2
2C047010L	1985	7.5	2.4	0.2	1.5	11.6	4.5
2C047010U	1985	7.5	2.4	0.2	1.5	11.6	4.7
2C057004	1985	5.0	3.4	0.2	1.5	10.1	4.7
2C066026L	1985	2.5	4.2	0.4	36.7	43.9	4.5
2C066027L	1985	1.3	1.2	0.2	1.5	4.3	4.5
2C066027U	1985	3.3	1.9	0.4	4.1	9.6	4.4
2C066039L	1985	2.6	4.2	0.5	36.7	43.8	4.5
2C077022U	1985	2.2	4.2	0.5	36.8	43.6	4.6
BJ35	1999	1.3	1.5	0.2	1.9	4.8	4.5
BJ72	1999	1.3	1.2	0.2	1.5	4.2	4.5
BJ76	1999	3.1	2.1	0.4	1.7	7.3	4.9
BJ77	1999	3.5	3.6	0.4	2.3	9.8	4.8
BLFC	1991	1.5	1.7	1.7	6.0	10.9	4.4
CO01	1993	3.0	2.7	0.4	49.5	55.7	4.5
CO05	1993	2.6	4.2	0.4	36.7	43.8	4.5
CO06	1993	3.6	2.9	0.4	44.2	51.1	4.6
CO10	1993	2.3	4.2	0.4	36.8	43.7	4.7
DR	1994	1.7	1.7	0.3	1.9	5.5	4.6
DR01	1990	2.2	2.1	0.2	1.9	6.5	4.5
DS04	1994	2.1	1.1	0.4	2.7	6.3	4.4
DS06	1994	2.1	1.1	0.4	2.7	6.3	4.4
DS09	1994	2.1	1.1	0.4	2.7	6.2	4.4
DS19	1994	2.1	1.1	0.4	2.7	6.2	4.4
DS50	1994	2.1	1.1	0.4	2.7	6.2	4.5
FN1	1994	3.3	1.9	0.4	4.1	9.6	4.5
FN2	1994	3.3	1.9	0.4	4.1	9.6	4.5
FN3	1994	3.3	1.9	0.4	4.1	9.6	4.5
GS01	2000	1.3	1.4	0.2	1.9	4.8	4.5
GS02	2000	1.3	1.2	0.2	1.5	4.3	4.5
GS04	2000	1.2	1.5	0.2	1.9	4.8	4.5
GS05	2000	2.1	0.8	0.2	0.7	3.8	4.7
GS06	2000	2.9	1.2	0.2	2.3	6.6	4.8
GS07	2000	18.1	8.7	9.2	5.4	41.3	4.5
GS08	2000	18.1	8.7	9.1	5.4	41.3	4.5
LB01	1987	7.6	5.5	1.3	7.0	21.3	4.7
LEWF	1991	7.5	2.3	1.3	5.9	17.0	4.5
M037	1991	1.5	1.7	1.7	6.0	10.9	4.5
M038	1991	1.5	1.7	1.7	6.0	10.9	4.5

Table I-8. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
M039	1991	1.5	1.7	1.7	6.1	11.0	4.5
NFD	1994	3.1	4.8	0.3	2.1	10.2	4.6
NFDR	1990	14.1	7.3	0.4	2.9	24.5	5.1
OC02	1994	1.4	0.9	0.4	3.0	5.7	4.5
OC05	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC08	1994	1.4	0.9	0.4	3.0	5.8	4.4
OC09	1994	1.4	0.9	0.4	3.0	5.7	4.4
OC31	1994	1.4	0.9	0.4	3.0	5.7	4.4
OC32	1994	1.4	0.9	0.4	3.0	5.7	4.5
OC35	1994	1.3	0.9	0.5	3.0	5.7	4.5
OC79	1994	1.4	0.9	0.4	3.0	5.8	4.5
PAIN	1994	1.7	1.7	0.3	1.9	5.5	4.5
SP10	1992	2.0	2.7	0.4	34.1	39.3	4.5
SP39	1992	2.7	2.0	0.4	27.4	32.4	4.5
SP41	1993	2.1	2.9	0.5	35.1	40.5	4.7
STAN	1994	11.3	7.0	0.2	2.9	21.5	4.6
VA524S	1994	5.0	3.4	0.2	1.5	10.2	4.5
VA526S	1994	3.5	2.0	0.2	1.4	7.2	5.0
VA531S	1994	3.1	4.8	0.2	2.1	10.2	4.9
VA548S	1994	5.4	2.5	0.2	1.5	9.5	4.4
VA555S	1994	1.5	1.7	1.7	6.0	10.9	4.5
VA821S	1994	3.5	2.1	0.2	1.4	7.3	4.8
VT02	1990	14.1	7.3	0.3	2.9	24.5	4.5
VT05	1990	2.2	2.1	0.2	2.0	6.5	4.5
VT07	1990	2.2	2.1	0.3	1.9	6.5	4.5
VT08	1990	2.2	2.1	0.3	2.0	6.4	4.5
VT09	1990	2.1	2.1	0.3	1.9	6.4	4.6
VT10	1990	2.2	2.1	0.2	1.9	6.4	4.5
VT11	1990	2.1	2.0	0.3	1.9	6.4	4.7
VT12	1990	2.2	2.1	0.2	1.9	6.4	4.7
VT15	1990	2.2	2.1	0.2	1.9	6.4	4.6
VT18	1990	3.8	5.7	0.2	2.9	12.4	4.8
VT19	1990	3.8	5.6	0.2	2.9	12.5	4.5
VT20	1990	2.2	2.1	0.3	1.9	6.4	4.8
VT24	1990	2.2	2.1	0.2	1.9	6.4	4.5
VT25	1990	2.2	2.1	0.2	1.9	6.4	4.5
VT26	1990	2.2	2.0	0.3	2.0	6.4	4.4
VT28	1990	2.2	2.0	0.2	2.0	6.4	4.5
VT29	1990	2.1	2.1	0.2	1.9	6.3	4.5
VT31	1990	2.1	2.1	0.3	1.9	6.4	4.4
VT32	1990	2.2	2.1	0.2	1.9	6.4	4.5
VT34	1990	2.2	2.1	0.3	1.9	6.4	4.5
VT35	1990	2.1	2.0	0.3	1.9	6.4	4.5
VT36	1990	2.2	2.1	0.2	1.9	6.4	4.5
VT37	1990	3.8	5.6	0.2	2.9	12.4	4.5
VT38	1990	3.8	5.6	0.2	2.9	12.6	4.7
VT39	1990	2.1	2.1	0.2	2.0	6.5	4.5

Table I-8. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
VT41	1990	2.2	2.1	0.3	2.0	6.4	4.6
VT46	1990	14.1	7.3	0.2	2.9	24.4	4.9
VT48	1990	2.2	2.1	0.3	2.0	6.4	4.6
VT49	1990	2.2	2.1	0.3	2.0	6.5	4.7
VT50	1990	2.1	2.0	0.3	2.0	6.4	4.4
VT53	1990	2.2	2.1	0.3	2.0	6.5	4.6
VT54	1990	3.8	5.7	0.2	2.9	12.5	4.8
VT55	1990	3.8	5.7	0.3	2.9	12.5	4.8
VT56	1990	2.2	2.1	0.3	1.9	6.4	4.6
VT57	1990	3.8	5.6	0.2	2.9	12.5	4.8
VT58	1990	14.1	7.3	0.2	2.9	24.4	5.1
VT59	1990	14.1	7.3	0.2	2.9	24.4	4.6
VT62	1990	14.1	7.3	0.2	2.9	24.4	5.0
VT66	1990	17.7	20.1	0.3	0.8	38.9	4.7
VT68	1990	2.1	2.1	0.2	1.9	6.3	4.5
VT70	1990	2.1	2.1	0.2	1.9	6.4	4.5
VT72	1990	2.2	2.1	0.3	1.9	6.4	4.5
VT73	1990	2.2	2.1	0.3	2.0	6.4	4.6
VT74	1990	2.2	2.1	0.3	1.9	6.4	4.6
VT75	1990	17.8	20.1	0.3	0.8	39.0	5.3
VT76	1990	2.2	2.1	0.3	2.0	6.5	4.5
VT77	1990	2.2	2.1	0.2	2.0	6.4	4.6
VT78	1990	2.1	2.1	0.2	1.9	6.4	4.4
WOR	1994	1.8	1.7	0.4	1.9	5.7	4.5
WOR1	1990	2.2	2.1	0.3	1.9	6.4	4.8
WV523S	1994	2.1	1.1	0.4	2.7	6.3	4.4
WV531S	1994	7.0	3.1	0.2	1.4	11.7	4.7
WV547S	1994	3.5	2.1	0.2	1.4	7.3	4.6
WV548S	1994	4.6	2.7	0.2	1.5	8.9	4.5
WV769S	1994	7.5	2.4	0.2	1.5	11.5	5.0
WV770S	1994	8.4	3.4	0.2	1.6	13.6	4.9
WV771S	1994	7.4	2.6	0.1	1.5	11.6	5.1
WV785S	1994	4.6	2.7	0.2	1.4	9.0	4.7
WV788S	1994	5.0	3.4	0.2	1.6	10.1	4.8
WV796S	1994	8.1	2.8	0.2	1.5	12.5	4.9

Table I-9 The differences between simulated and observed (sim-obs) soil variable values resulting from the calibration of each SAMI site (simulated values are median values of multiple calibrations at each site). The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

		Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
	Average	-0.01	-0.01	0.01	-0.01	-0.01	-0.13
	Std. Dev.	0.02	0.02	0.04	0.01	0.05	0.21
	Maximum	0.03	0.13	0.13	0.05	0.14	0.54
	Minimum	-0.07	-0.08	-0.09	-0.05	-0.15	-0.65
Site ID	**Calibration Year**	**Exchg Ca %**	**Exchg Mg %**	**Exchg Na %**	**Exchg K %**	**BS %**	**pH**
2A068015U	1985	0.00	-0.01	-0.02	-0.01	-0.05	-0.27
2A07701	1985	0.00	-0.01	-0.01	-0.01	-0.06	-0.24
2A07805	1985	-0.01	0.00	-0.05	-0.02	-0.05	-0.11
2A07806	1985	-0.02	-0.02	-0.02	-0.03	-0.07	-0.43
2A07810L	1985	-0.04	-0.01	-0.01	0.00	-0.10	-0.18
2A07810U	1985	0.03	-0.05	0.00	-0.01	0.00	-0.13
2A07811	1985	-0.02	-0.01	0.01	0.01	-0.04	-0.25
2A07812	1985	-0.01	0.00	-0.01	-0.02	-0.04	-0.09
2A07816	1985	-0.03	0.00	0.03	-0.01	0.01	-0.08
2A07817	1985	-0.03	-0.02	-0.01	-0.01	-0.08	-0.32
2A07821	1985	-0.02	-0.02	-0.03	0.01	-0.06	0.06
2A07823	1985	-0.03	0.01	-0.01	-0.01	-0.09	-0.33
2A07828	1985	-0.02	0.00	-0.01	0.00	-0.10	-0.19
2A07829	1985	0.01	-0.01	0.00	0.00	-0.02	0
2A07834	1985	-0.03	-0.01	-0.01	-0.03	-0.06	-0.16
2A07835	1985	-0.01	-0.02	-0.02	-0.04	-0.07	-0.02
2A07882	1985	-0.01	0.00	0.00	-0.02	-0.02	0
2A08802	1985	-0.01	-0.04	-0.01	0.00	-0.14	-0.01
2A08804	1985	-0.04	-0.03	-0.03	-0.01	-0.15	-0.38
2A08805	1985	-0.03	-0.02	0.00	0.00	-0.02	-0.18
2A08810	1985	-0.01	-0.03	-0.02	0.01	-0.03	-0.06
2A08901	1985	0.01	0.00	-0.03	-0.03	-0.02	0
2B041020L	1985	0.00	-0.02	0.07	-0.01	0.06	-0.18
2B041049U	1985	-0.06	0.13	0.01	-0.02	0.03	0.12
2B047032	1985	-0.03	-0.05	0.05	-0.05	-0.06	0.02
2B047044U	1985	-0.07	-0.08	0.04	-0.02	-0.13	-0.16
2B047076L	1985	-0.01	0.01	0.02	0.01	0.00	-0.11
2B047076U	1985	-0.01	-0.01	0.00	0.00	0.01	-0.09
2B058015U	1985	0.00	-0.03	-0.03	0.04	0.01	-0.04
2C041033U	1985	-0.02	-0.01	0.03	0.02	0.09	-0.49
2C041039	1985	0.02	-0.02	0.05	0.00	0.02	-0.09
2C041040	1985	0.00	0.00	0.12	-0.04	0.06	-0.52
2C041043U	1985	-0.01	-0.01	0.06	-0.02	0.04	-0.19
2C041045	1985	0.00	0.00	0.09	-0.02	0.03	-0.11

Table I-9. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
2C041051	1985	-0.01	0.00	0.07	-0.02	0.01	-0.4
2C046013L	1985	-0.03	0.00	0.04	0.01	0.00	-0.06
2C046033	1985	-0.01	-0.03	0.02	0.01	-0.04	-0.32
2C046034	1985	0.00	0.00	0.04	-0.01	0.01	-0.47
2C046043L	1985	0.00	-0.04	0.08	-0.01	0.09	-0.49
2C046043U	1985	-0.01	0.02	0.09	-0.02	0.08	-0.47
2C046050	1985	-0.03	-0.03	0.06	0.00	0.05	-0.48
2C046053L	1985	-0.02	-0.01	0.08	-0.03	0.01	-0.49
2C046062L	1985	-0.01	-0.01	0.01	0.01	0.02	0.05
2C047007	1985	0.00	-0.04	0.08	-0.04	-0.06	0.24
2C047010L	1985	-0.01	-0.01	0.06	0.00	0.00	-0.52
2C047010U	1985	-0.02	0.00	0.06	-0.02	0.02	-0.26
2C057004	1985	-0.01	-0.03	0.06	-0.04	-0.04	-0.33
2C066026L	1985	-0.02	0.00	-0.01	0.01	-0.03	-0.19
2C066027L	1985	0.01	0.01	0.00	-0.02	-0.04	0.54
2C066027U	1985	-0.01	-0.01	-0.02	-0.02	-0.04	-0.06
2C066039L	1985	-0.01	-0.01	0.00	0.02	-0.04	-0.21
2C077022U	1985	-0.01	0.00	0.00	0.00	-0.06	-0.12
BJ35	1999	0.01	-0.01	0.01	0.00	-0.02	0.1
BJ72	1999	0.00	-0.02	0.01	-0.03	-0.05	0.54
BJ76	1999	-0.01	-0.03	-0.01	0.00	-0.07	-0.17
BJ77	1999	0.00	-0.02	-0.04	-0.02	-0.05	-0.32
BLFC	1991	0.02	-0.04	-0.03	-0.02	-0.03	-0.06
CO01	1993	-0.02	0.00	-0.01	0.00	-0.07	-0.21
CO05	1993	-0.01	-0.02	-0.09	-0.03	-0.13	-0.17
CO06	1993	-0.03	-0.02	-0.01	0.01	-0.08	-0.14
CO10	1993	0.02	0.00	-0.08	-0.02	-0.05	-0.01
DR	1994	-0.01	0.02	0.07	0.03	0.04	-0.07
DR01	1990	0.00	-0.02	-0.01	-0.01	0.04	-0.22
DS04	1994	-0.01	0.00	-0.01	-0.01	0.02	0.15
DS06	1994	0.00	-0.02	-0.01	0.00	-0.02	0.11
DS09	1994	0.00	-0.02	-0.01	-0.01	-0.05	0.12
DS19	1994	-0.01	0.00	-0.02	-0.01	-0.04	0.11
DS50	1994	0.00	0.01	-0.01	-0.01	-0.04	0.19
FN1	1994	-0.02	-0.03	0.04	-0.04	-0.04	0.03
FN2	1994	-0.03	0.04	-0.03	-0.03	0.00	-0.02
FN3	1994	-0.04	-0.01	0.00	-0.02	-0.05	-0.05
GS01	2000	0.01	-0.03	0.02	-0.01	0.00	0.13
GS02	2000	-0.01	-0.03	0.01	-0.02	-0.02	0.53
GS04	2000	-0.07	0.02	0.02	-0.02	-0.04	0.15
GS05	2000	0.02	-0.03	0.00	-0.02	-0.02	-0.05
GS06	2000	-0.01	-0.01	0.00	-0.01	-0.03	-0.19
GS07	2000	-0.01	0.01	0.01	-0.01	0.04	-0.18
GS08	2000	-0.02	-0.01	-0.01	0.02	0.00	-0.18
LB01	1987	0.00	-0.01	0.00	0.00	-0.07	-0.2
LEWF	1991	-0.01	0.00	-0.01	0.00	-0.01	0.02

Table I-9. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
M037	1991	0.00	0.00	0.01	0.00	0.00	-0.03
M038	1991	-0.01	0.00	-0.01	0.00	0.00	-0.04
M039	1991	0.00	0.01	0.02	0.02	0.03	0.02
NFD	1994	-0.02	0.00	0.07	-0.01	-0.02	-0.44
NFDR	1990	0.00	-0.01	0.13	-0.01	0.05	-0.05
OC02	1994	-0.02	0.02	-0.02	-0.01	-0.08	0.05
OC05	1994	-0.01	-0.01	-0.01	0.00	0.00	-0.04
OC08	1994	-0.03	-0.01	-0.02	-0.01	-0.01	-0.04
OC09	1994	0.01	-0.03	-0.03	-0.01	-0.02	0
OC31	1994	0.00	0.00	0.00	-0.01	-0.08	-0.03
OC32	1994	-0.02	-0.01	-0.01	0.00	-0.05	0.04
OC35	1994	-0.07	0.02	0.01	0.00	-0.02	0.06
OC79	1994	-0.01	0.01	0.00	-0.01	-0.01	0.08
PAIN	1994	-0.03	0.04	0.04	0.00	0.01	-0.14
SP10	1992	-0.02	-0.01	-0.01	0.01	0.01	-0.34
SP39	1992	-0.01	0.00	-0.03	0.00	-0.04	-0.27
SP41	1993	-0.02	-0.01	0.00	0.00	0.02	-0.25
STAN	1994	-0.02	-0.02	-0.01	-0.01	-0.02	-0.6
VA524S	1994	0.00	0.00	0.09	0.00	0.04	-0.48
VA526S	1994	-0.03	-0.04	0.05	-0.01	0.01	-0.01
VA531S	1994	-0.02	-0.01	0.00	-0.01	-0.05	-0.18
VA548S	1994	0.00	0.00	0.06	0.05	0.14	-0.57
VA555S	1994	0.01	0.02	0.00	0.01	0.02	0.01
VA821S	1994	-0.02	0.04	0.04	-0.02	0.09	-0.18
VT02	1990	-0.02	-0.01	0.07	0.01	0.07	-0.65
VT05	1990	0.00	-0.02	0.00	0.00	0.06	-0.14
VT07	1990	0.00	-0.01	0.03	-0.01	0.05	-0.22
VT08	1990	-0.01	0.00	0.01	0.00	0.01	-0.17
VT09	1990	-0.02	0.00	0.02	-0.01	-0.05	-0.04
VT10	1990	0.00	-0.01	-0.01	-0.01	0.02	-0.2
VT11	1990	-0.02	-0.03	0.01	-0.02	-0.06	-0.01
VT12	1990	0.00	0.01	-0.01	-0.01	0.02	0
VT15	1990	-0.01	-0.01	-0.02	-0.01	-0.02	-0.09
VT18	1990	-0.01	0.00	0.02	-0.01	-0.05	0.18
VT19	1990	-0.03	-0.01	0.03	0.02	0.00	-0.15
VT20	1990	0.00	0.00	0.02	-0.01	-0.02	0.14
VT24	1990	-0.01	-0.01	-0.02	-0.01	-0.01	-0.2
VT25	1990	-0.01	0.00	0.00	-0.01	-0.05	-0.14
VT26	1990	0.00	-0.03	0.01	0.00	-0.04	-0.25
VT28	1990	0.01	-0.04	-0.01	0.00	-0.01	-0.21
VT29	1990	-0.02	-0.01	-0.01	-0.02	-0.08	-0.22
VT31	1990	-0.03	-0.01	0.01	-0.02	0.01	-0.24
VT32	1990	-0.01	-0.02	-0.02	-0.01	-0.03	-0.18
VT34	1990	-0.01	0.00	0.01	-0.01	0.00	-0.19
VT35	1990	-0.02	-0.03	0.03	-0.01	-0.01	-0.2
VT36	1990	0.01	0.01	-0.02	-0.01	0.02	-0.19

Table I-9. Continued.

Site ID	Calibration Year	Exchg Ca %	Exchg Mg %	Exchg Na %	Exchg K %	BS %	pH
VT37	1990	0.01	-0.01	0.00	-0.02	-0.04	-0.13
VT38	1990	0.02	-0.01	0.07	0.02	0.09	0.09
VT39	1990	-0.02	-0.01	0.00	0.00	0.08	-0.2
VT41	1990	0.00	0.00	0.01	0.00	0.03	-0.06
VT46	1990	-0.01	-0.01	-0.01	-0.01	-0.05	-0.29
VT48	1990	-0.01	0.01	0.01	0.00	-0.03	-0.1
VT49	1990	-0.01	0.02	0.06	0.01	0.05	0.06
VT50	1990	-0.03	-0.04	0.03	0.00	0.00	-0.25
VT53	1990	-0.01	0.00	0.06	0.02	0.10	-0.1
VT54	1990	0.00	0.00	0.06	0.00	-0.03	0.12
VT55	1990	-0.02	0.01	0.10	0.00	0.05	0.18
VT56	1990	0.00	-0.01	0.01	-0.01	-0.01	-0.12
VT57	1990	-0.03	-0.01	0.03	-0.01	0.00	0.18
VT58	1990	-0.01	0.00	0.01	-0.01	-0.01	-0.05
VT59	1990	-0.02	0.00	0.02	0.00	-0.03	-0.52
VT62	1990	-0.01	-0.01	-0.01	0.00	-0.01	-0.13
VT66	1990	-0.01	0.01	-0.01	0.00	-0.08	-0.49
VT68	1990	-0.02	-0.02	-0.02	-0.01	-0.10	-0.22
VT70	1990	-0.02	-0.02	0.00	-0.01	-0.06	-0.19
VT72	1990	0.00	-0.01	0.01	-0.01	-0.02	-0.22
VT73	1990	-0.01	-0.02	0.03	0.00	0.03	-0.06
VT74	1990	-0.01	0.00	0.01	-0.01	-0.05	-0.03
VT75	1990	0.01	-0.01	-0.04	-0.01	-0.01	0.12
VT76	1990	0.00	0.00	0.01	0.00	0.04	-0.13
VT77	1990	0.02	-0.01	-0.01	0.00	0.01	-0.11
VT78	1990	-0.02	-0.01	-0.01	-0.01	-0.06	-0.23
WOR	1994	0.00	-0.02	0.00	-0.02	0.00	-0.13
WOR1	1990	0.00	0.00	0.04	-0.01	0.02	0.12
WV523S	1994	0.00	0.00	-0.01	-0.01	-0.01	0.15
WV531S	1994	0.00	-0.02	0.08	-0.02	0.00	-0.34
WV547S	1994	-0.01	0.02	0.09	0.00	0.12	-0.44
WV548S	1994	-0.01	-0.01	0.05	0.02	0.04	-0.52
WV769S	1994	-0.02	-0.02	0.02	-0.01	-0.05	0.02
WV770S	1994	-0.05	-0.03	0.06	0.00	0.01	-0.12
WV771S	1994	0.00	0.02	-0.04	-0.03	-0.09	0.14
WV785S	1994	0.01	-0.01	0.10	-0.02	0.12	-0.35
WV788S	1994	-0.03	0.00	0.02	0.01	0.01	-0.2
WV796S	1994	-0.01	-0.02	0.04	-0.01	-0.03	-0.08

Table I-10. The "optimized" soil parameter values resulting from the calibration of each SAMI site. Units for weathering are meq/m^2/yr. The table is arranged alphabetically in ascending order by SAMI ID. The number of sites is 164.

	Max. Capac. meq/kg	Soil DOC mmol/m^3	Weathering Ca	Weathering Mg	Weathering Na	Weathering K	Init Exchg Ca %	Init Exchg Mg %	Init Exchg Na %	Init Exchg K %
Average	23	148	19.0	18.8	14.4	8.1	4.9	3.6	0.5	4.6
Std. Dev.	26	71	16.1	11.5	14.9	5.8	4.0	2.6	1.0	8.6
Maximum	228	250	91.5	76.9	117.6	27.9	18.3	20.5	9.3	49.6
Minimum	4	28	0.0	4.9	0.0	0.8	1.5	0.9	0.2	0.7
Site ID	**Max. Capac. meq/kg**	**Soil DOC mmol/m^3**	**Weathering Ca**	**Weathering Mg**	**Weathering Na**	**Weathering K**	**Init Exchg Ca %**	**Init Exchg Mg %**	**Init Exchg Na %**	**Init Exchg K %**
2A068015U	39	54	5.5	13.5	13.4	12.5	4.8	2.9	0.5	1.9
2A07701	25	105	51.7	17.1	24.5	8.5	4.3	2.7	0.4	1.8
2A07805	21	93	17.4	8.6	16.0	2.5	4.9	2.7	0.5	1.7
2A07806	18	158	36.9	10.7	49.7	8.9	5.0	4.4	0.4	2.3
2A07810L	28	108	23.5	11.5	16.7	5.3	3.6	1.5	0.2	2.4
2A07810U	36	74	13.1	8.8	27.9	5.0	3.7	1.5	0.3	2.4
2A07811	19	48	9.5	7.1	11.2	3.7	5.3	3.0	0.6	1.8
2A07812	42	101	44.3	23.2	58.7	12.5	3.8	2.5	0.4	1.8
2A07816	56	62	21.7	11.1	30.5	8.3	2.9	2.0	0.6	1.5
2A07817	49	75	25.3	13.0	25.7	7.1	3.9	2.5	0.5	1.7
2A07821	27	84	18.1	7.5	26.5	4.7	3.6	4.1	0.4	2.4
2A07823	11	180	21.5	17.3	27.6	8.2	3.5	2.5	0.4	1.7
2A07828	35	55	21.4	18.1	30.3	9.9	4.2	3.3	0.5	2.1
2A07829	45	42	19.9	12.8	36.8	9.5	3.6	4.0	0.5	2.4
2A07834	28	46	8.2	7.3	17.2	3.7	3.6	3.7	0.4	2.3
2A07835	20	71	13.4	11.1	32.3	4.1	5.3	4.9	0.4	2.4
2A07882	42	76	31.3	16.5	31.6	6.5	3.5	3.2	0.5	2.0
2A08802	51	72	28.3	50.0	33.0	15.3	5.4	4.7	0.4	1.9
2A08804	42	96	21.6	26.1	36.4	12.9	2.6	4.3	0.4	2.5
2A08805	20	104	33.7	26.7	29.9	8.5	3.1	4.6	0.4	2.5
2A08810	32	110	41.5	35.0	32.2	9.6	2.8	4.8	0.4	2.5
2A08901	35	85	37.7	21.9	44.6	11.6	3.3	4.5	0.4	2.4
2B041020L	30	111	51.5	76.9	32.6	15.9	11.4	5.6	0.3	1.9
2B041049U	4	54	3.2	13.3	0.6	3.1	1.9	1.9	0.6	3.1
2B047032	15	55	26.8	35.1	24.6	8.7	10.1	5.9	0.3	1.9
2B047044U	15	129	74.1	58.0	35.0	13.9	9.3	4.7	0.2	1.7
2B047076L	9	161	3.5	15.1	5.1	17.9	1.9	2.0	0.5	2.0
2B047076U	8	98	5.4	12.3	6.6	27.5	2.1	2.1	0.5	2.2
2B058015U	12	250	0.2	23.6	7.7	21.3	1.6	2.0	1.8	6.3
2C041033U	18	125	30.0	26.0	20.8	10.1	10.4	3.8	0.2	1.8
2C041039	14	57	9.1	14.8	16.3	4.8	10.4	4.3	0.3	1.7
2C041040	14	250	20.9	31.9	12.5	9.0	8.7	3.3	0.3	1.6
2C041043U	10	118	9.9	19.2	14.0	6.3	9.2	3.7	0.3	1.6
2C041045	12	133	41.9	34.7	51.9	7.5	9.6	3.8	0.3	1.7
2C041051	6	46	22.2	11.1	15.3	3.4	6.9	4.6	0.4	1.6
2C046013L	13	64	25.3	40.1	24.6	6.3	5.5	4.0	0.3	1.6
2C046033	16	31	5.1	12.2	1.1	3.5	8.2	4.1	0.2	1.6
2C046034	18	121	36.4	31.1	1.1	4.3	6.8	4.2	0.3	1.6

Table I-10. Continued.

Site ID	Max. Capac. meq/kg	Soil DOC mmol/m^3	Weathering Ca	Weathering Mg	Weathering Na	Weathering K	Init Exchg Ca %	Init Exchg Mg %	Init Exchg Na %	Init Exchg K %
2C046043L	12	169	50.1	21.7	55.0	3.5	6.8	4.3	0.3	1.6
2C046043U	10	151	40.5	20.8	44.6	3.1	8.3	3.7	0.3	1.5
2C046050	8	154	56.7	37.2	117.6	16.8	5.1	2.9	0.2	1.7
2C046053L	9	124	28.2	29.4	5.8	4.5	5.5	3.8	0.3	1.6
2C046062L	22	97	44.6	62.1	11.7	5.5	12.2	6.2	0.3	1.8
2C047007	14	44	18.7	27.8	25.8	9.7	12.3	6.3	0.5	2.0
2C047010L	25	248	26.5	26.0	11.3	10.5	8.4	2.9	0.2	1.6
2C047010U	21	37	6.7	12.4	12.0	8.0	9.4	3.7	0.3	1.8
2C057004	7	78	6.3	17.1	3.6	4.0	6.4	5.1	0.2	1.7
2C066026L	23	225	9.5	15.6	1.8	5.8	2.8	4.4	0.5	36.8
2C066027L	56	211	15.0	35.5	13.3	14.0	1.6	1.6	0.2	1.7
2C066027U	58	231	0.0	23.3	13.1	9.8	3.5	2.1	0.4	4.2
2C066039L	23	231	23.9	14.0	5.9	7.4	2.8	4.4	0.5	36.8
2C077022U	23	156	11.3	17.0	6.2	4.6	2.4	4.4	0.5	36.9
BJ35	36	247	55.1	21.9	18.1	2.9	2.1	2.1	0.3	2.1
BJ72	55	250	15.7	10.8	20.2	5.7	1.5	1.3	0.2	1.5
BJ76	36	57	10.0	8.1	18.2	4.6	3.6	2.3	0.5	1.7
BJ77	26	48	12.3	9.6	24.4	6.2	3.9	3.9	0.4	2.3
BLFC	20	250	0.0	12.2	5.2	12.2	1.6	1.8	1.8	6.1
CO01	22	151	0.2	18.0	0.2	17.6	3.1	2.8	0.5	49.6
CO05	10	183	24.1	27.9	0.0	16.9	2.9	4.5	0.4	36.8
CO06	27	169	30.2	34.6	11.9	27.9	3.7	3.0	0.5	44.2
CO10	9	84	22.2	28.8	0.0	18.1	3.0	5.2	0.5	37.2
DR	11	68	0.0	11.1	4.1	17.8	2.0	2.2	0.4	2.2
DR01	10	225	3.0	17.3	4.4	21.8	2.3	2.3	0.3	2.1
DS04	13	248	3.7	7.9	0.3	1.4	2.2	1.2	0.4	2.7
DS06	12	249	1.6	6.5	0.5	0.9	2.2	1.2	0.4	2.7
DS09	12	249	7.7	7.6	1.2	1.3	2.2	1.2	0.4	2.7
DS19	14	250	12.4	7.7	0.5	1.3	2.2	1.2	0.4	2.7
DS50	16	250	11.5	7.4	1.9	1.4	2.2	1.2	0.4	2.7
FN1	29	107	13.3	29.4	14.1	3.9	7.4	6.0	0.9	4.6
FN2	32	221	29.6	29.5	8.8	6.4	5.5	3.2	0.5	4.5
FN3	41	249	23.4	25.8	3.9	5.2	4.7	2.8	0.5	4.3
GS01	168	250	50.0	25.6	19.1	7.9	1.6	1.8	0.2	2.1
GS02	228	212	59.1	25.5	26.3	7.5	1.8	1.7	0.2	1.7
GS04	79	250	91.5	45.1	36.6	4.0	2.3	2.4	0.3	2.1
GS05	108	98	9.4	8.8	21.4	11.9	2.2	0.9	0.2	0.7
GS06	25	145	22.8	11.0	18.6	3.7	3.5	1.4	0.3	2.4
GS07	62	190	17.2	10.4	19.4	5.2	18.3	8.8	9.3	5.4
GS08	138	187	20.0	12.6	23.1	6.3	18.2	8.8	9.2	5.4
LB01	7	127	64.4	13.7	6.8	10.7	13.3	7.6	1.8	7.8
LEWF	35	236	25.5	13.6	25.7	5.9	8.7	2.8	1.5	6.1
M037	15	250	3.9	18.4	9.9	12.5	1.7	2.0	1.9	6.2
M038	14	250	9.3	22.2	9.2	15.3	1.7	2.0	1.8	6.2
M039	22	191	0.8	10.8	4.5	13.4	1.6	1.9	1.8	6.2
NFD	11	154	32.7	15.3	35.4	3.5	4.3	5.7	0.3	2.2

Table I-10. Continued.

Site ID	Max. Capac. meq/kg	Soil DOC mmol/m^3	Weathering Ca	Weathering Mg	Weathering Na	Weathering K	Init Exchg Ca %	Init Exchg Mg %	Init Exchg Na %	Init Exchg K %
NFDR	8	41	8.8	5.5	25.3	2.0	14.9	7.8	0.6	2.9
OC02	13	227	10.6	7.0	0.3	1.5	1.7	1.1	0.5	3.0
OC05	12	247	2.6	5.6	1.3	1.1	1.5	1.0	0.5	3.0
OC08	12	250	3.9	8.5	0.5	1.7	1.5	1.0	0.4	3.0
OC09	12	237	0.1	4.9	2.1	0.9	1.5	1.0	0.4	3.0
OC31	11	250	1.5	5.1	1.0	0.8	1.5	1.0	0.5	3.0
OC32	11	204	4.2	6.7	1.0	1.3	1.6	1.1	0.5	3.0
OC35	10	122	16.1	9.1	4.3	1.1	2.3	1.3	0.6	3.1
OC79	19	250	20.7	12.9	1.2	2.4	1.7	1.1	0.5	3.0
PAIN	10	194	9.3	28.2	4.1	25.2	2.0	2.1	0.4	2.1
SP10	9	147	23.3	26.8	2.2	12.2	2.5	3.3	0.5	34.3
SP39	10	197	7.2	25.7	4.4	9.8	2.9	2.3	0.5	27.5
SP41	13	158	32.9	36.0	12.6	15.7	2.8	3.6	0.6	35.3
STAN	12	211	33.4	14.2	28.1	5.5	11.6	7.1	0.2	3.0
VA524S	11	93	7.3	11.0	3.5	4.9	5.8	4.0	0.3	1.7
VA526S	10	114	32.0	29.3	8.6	6.0	5.0	3.0	0.3	1.6
VA531S	14	74	14.1	11.1	27.8	3.7	3.8	5.3	0.3	2.2
VA548S	21	205	2.7	18.0	9.4	5.0	5.9	3.1	0.2	1.6
VA555S	26	171	12.5	16.9	4.0	6.1	1.7	2.0	1.8	6.1
VA821S	14	125	52.5	51.1	24.6	7.3	5.0	3.2	0.2	1.5
VT02	12	222	23.5	11.6	27.1	7.6	14.5	7.5	0.3	2.9
VT05	21	199	13.7	24.5	15.4	13.0	2.3	2.2	0.3	2.0
VT07	14	232	20.9	10.9	5.5	3.3	2.4	2.3	0.3	2.0
VT08	12	240	24.7	12.4	4.8	3.2	2.5	2.2	0.3	2.0
VT09	13	88	12.3	9.2	3.9	3.0	2.6	2.3	0.3	2.0
VT10	25	200	9.1	14.0	5.6	5.8	2.3	2.2	0.3	2.0
VT11	31	108	12.1	18.0	4.6	6.8	2.4	2.3	0.3	2.0
VT12	31	164	47.0	43.7	4.7	8.3	2.4	2.3	0.3	2.0
VT15	31	155	9.9	12.9	5.9	6.6	2.3	2.2	0.2	2.0
VT18	19	83	24.7	21.2	19.2	9.5	5.4	7.0	0.2	3.1
VT19	27	202	34.9	31.6	15.2	11.6	4.6	6.5	0.3	3.1
VT20	12	125	40.7	15.2	6.0	4.6	2.8	2.4	0.3	2.0
VT24	19	221	13.3	8.5	3.5	4.3	2.3	2.1	0.2	2.0
VT25	23	147	2.6	8.4	2.4	3.2	2.2	2.2	0.3	2.0
VT26	13	247	6.1	7.7	0.9	2.5	2.3	2.2	0.3	2.0
VT28	28	222	3.1	9.0	2.6	2.8	2.2	2.1	0.2	2.0
VT29	27	222	2.1	8.2	1.9	2.8	2.2	2.1	0.2	1.9
VT31	25	249	0.2	9.3	3.6	3.0	2.2	2.1	0.3	1.9
VT32	15	227	12.0	9.6	0.6	1.9	2.3	2.2	0.2	2.0
VT34	14	239	26.6	16.7	5.0	5.1	2.4	2.2	0.3	2.0
VT35	9	219	5.2	20.0	5.0	23.1	2.3	2.4	0.3	2.1
VT36	14	174	5.5	18.7	4.6	14.2	2.3	2.3	0.3	2.0
VT37	18	238	15.1	24.0	10.6	9.8	4.1	6.0	0.2	3.0
VT38	11	93	23.6	24.1	19.5	8.5	5.6	7.4	0.3	3.2
VT39	16	178	2.5	13.8	6.5	12.0	2.3	2.1	0.3	2.0
VT41	17	92	7.8	15.3	6.1	12.1	2.5	2.4	0.3	2.1

Table I-10. Continued.

Site ID	Max. Capac. meq/kg	Soil DOC mmol/m^3	Weathering Ca	Weathering Mg	Weathering Na	Weathering K	Init Exchg Ca %	Init Exchg Mg %	Init Exchg Na %	Init Exchg K %
VT46	19	89	21.5	6.4	25.1	1.7	14.4	7.4	0.3	2.9
VT48	16	123	1.3	12.6	11.6	14.7	2.3	2.3	0.3	2.0
VT49	8	35	1.6	9.5	4.3	3.5	2.6	2.7	0.3	2.0
VT50	8	230	2.8	17.2	1.7	5.4	2.3	2.4	0.3	2.0
VT53	11	94	2.8	12.2	6.2	15.3	2.4	2.5	0.4	2.2
VT54	11	85	19.7	20.5	16.5	8.9	5.9	7.7	0.4	3.2
VT55	9	108	12.2	19.9	27.4	6.0	5.4	7.6	0.5	3.1
VT56	12	134	4.4	20.1	5.1	10.5	2.3	2.3	0.3	2.0
VT57	10	51	4.0	11.6	9.1	6.2	4.8	7.0	0.3	3.1
VT58	13	67	15.4	10.0	21.6	3.3	14.3	7.4	0.3	2.9
VT59	13	164	20.7	7.7	25.1	3.9	14.3	7.4	0.3	2.9
VT62	15	85	17.2	13.1	22.9	3.7	14.3	7.4	0.3	2.9
VT66	11	186	28.3	22.8	13.4	1.1	18.1	20.4	0.4	0.8
VT68	19	225	5.8	15.1	6.8	11.2	2.2	2.1	0.2	2.0
VT70	21	202	10.6	16.9	8.0	18.3	2.3	2.2	0.3	2.0
VT72	17	194	6.8	16.3	6.0	17.4	2.3	2.2	0.3	2.1
VT73	16	134	9.6	18.3	9.2	17.0	2.5	2.4	0.4	2.1
VT74	17	79	5.9	13.6	5.8	11.4	2.4	2.4	0.3	2.0
VT75	12	83	30.4	24.9	14.6	0.9	18.2	20.5	0.4	0.8
VT76	17	135	0.0	11.6	7.5	13.9	2.3	2.2	0.3	2.1
VT77	18	200	5.7	19.8	14.5	15.9	2.3	2.3	0.3	2.0
VT78	14	232	8.7	13.1	3.4	3.5	2.3	2.2	0.2	2.0
WOR	14	149	9.9	27.2	3.7	23.2	2.1	2.2	0.5	2.0
WOR1	13	53	1.9	12.8	4.0	16.7	2.5	2.7	0.3	2.2
WV523S	13	188	29.4	19.3	2.0	6.8	2.5	1.4	0.4	2.8
WV531S	14	62	32.9	6.9	3.8	3.1	9.4	3.7	0.3	1.5
WV547S	11	145	20.5	22.1	14.1	3.6	5.3	3.5	0.3	1.6
WV548S	18	205	28.8	28.1	2.9	6.3	5.8	3.6	0.3	1.6
WV769S	22	28	28.2	40.1	3.7	7.9	11.4	5.0	0.3	1.8
WV770S	19	92	21.4	31.2	28.9	11.8	11.9	5.8	0.3	2.0
WV771S	15	107	25.8	17.8	16.1	4.5	9.2	3.5	0.2	1.6
WV785S	21	44	13.3	22.1	11.0	6.5	6.0	4.0	0.4	1.6
WV788S	17	30	16.0	10.9	3.5	5.4	7.6	4.9	0.3	1.7
WV796S	23	39	29.8	15.9	5.4	2.3	10.3	3.7	0.2	1.6

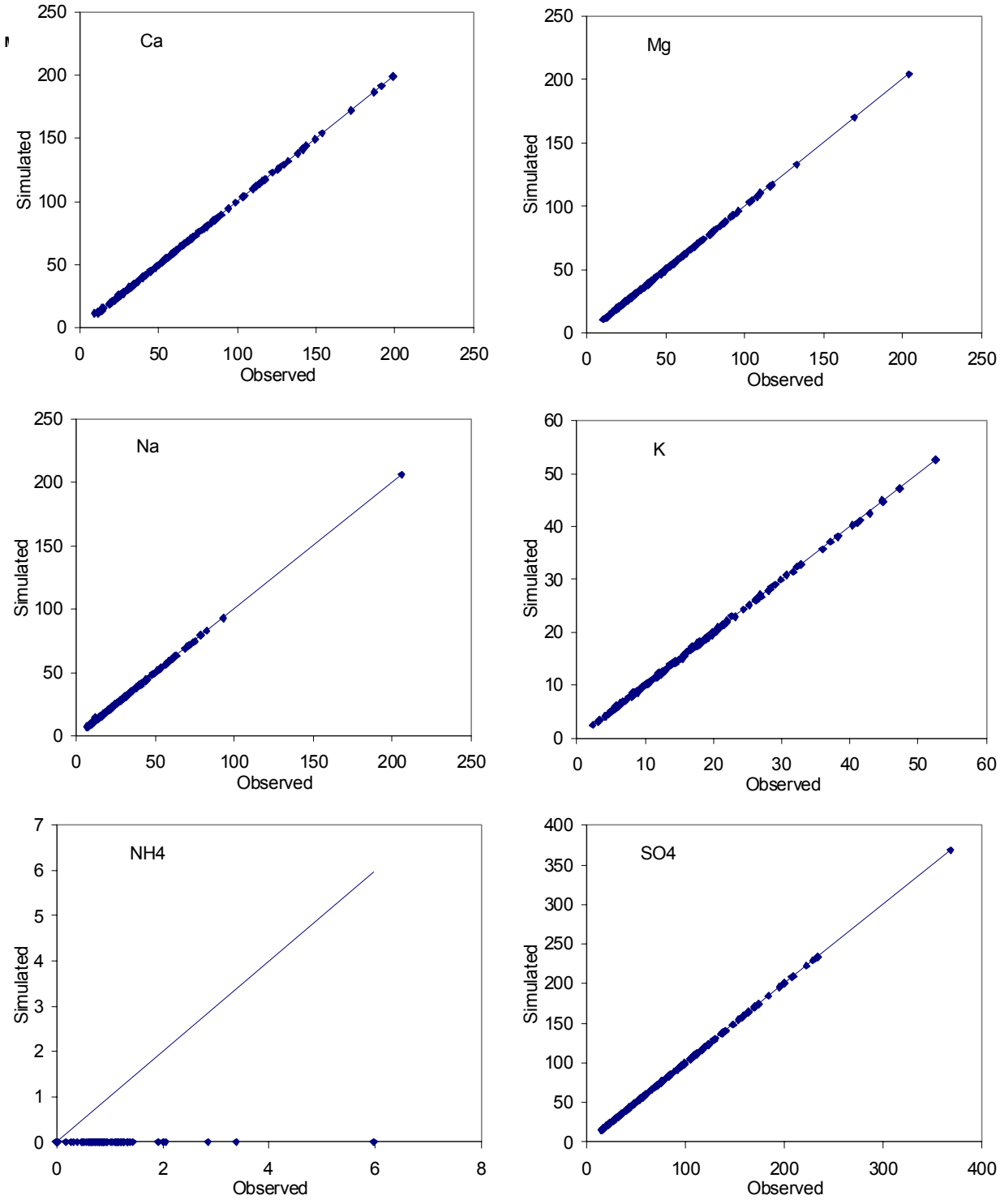

Figure I-1. Comparison of simulated and observed stream water variables for the calibration year at each SAMI site. The units are ueq/L. The number of sites is 164.

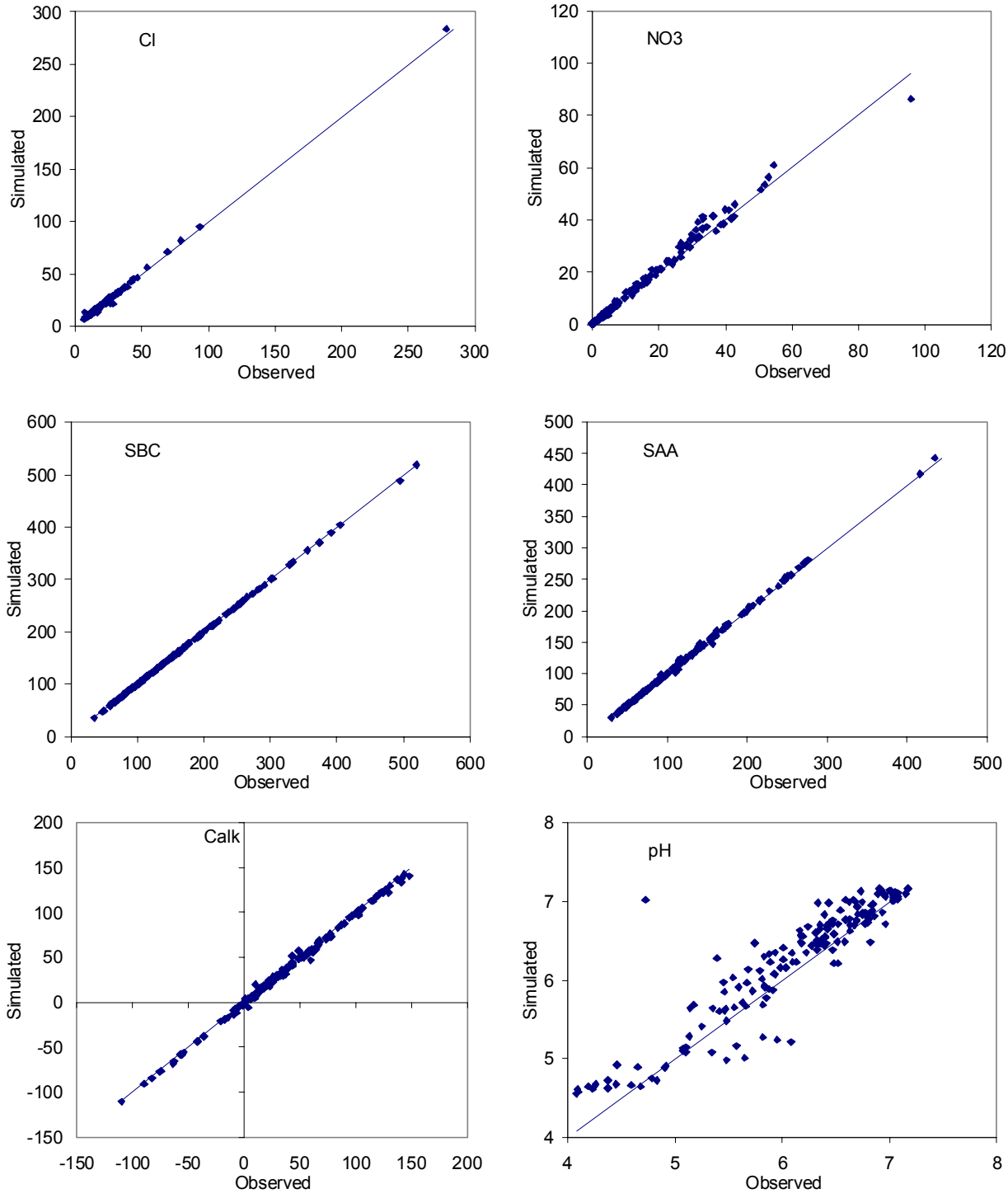

Figure I-1. Continued.

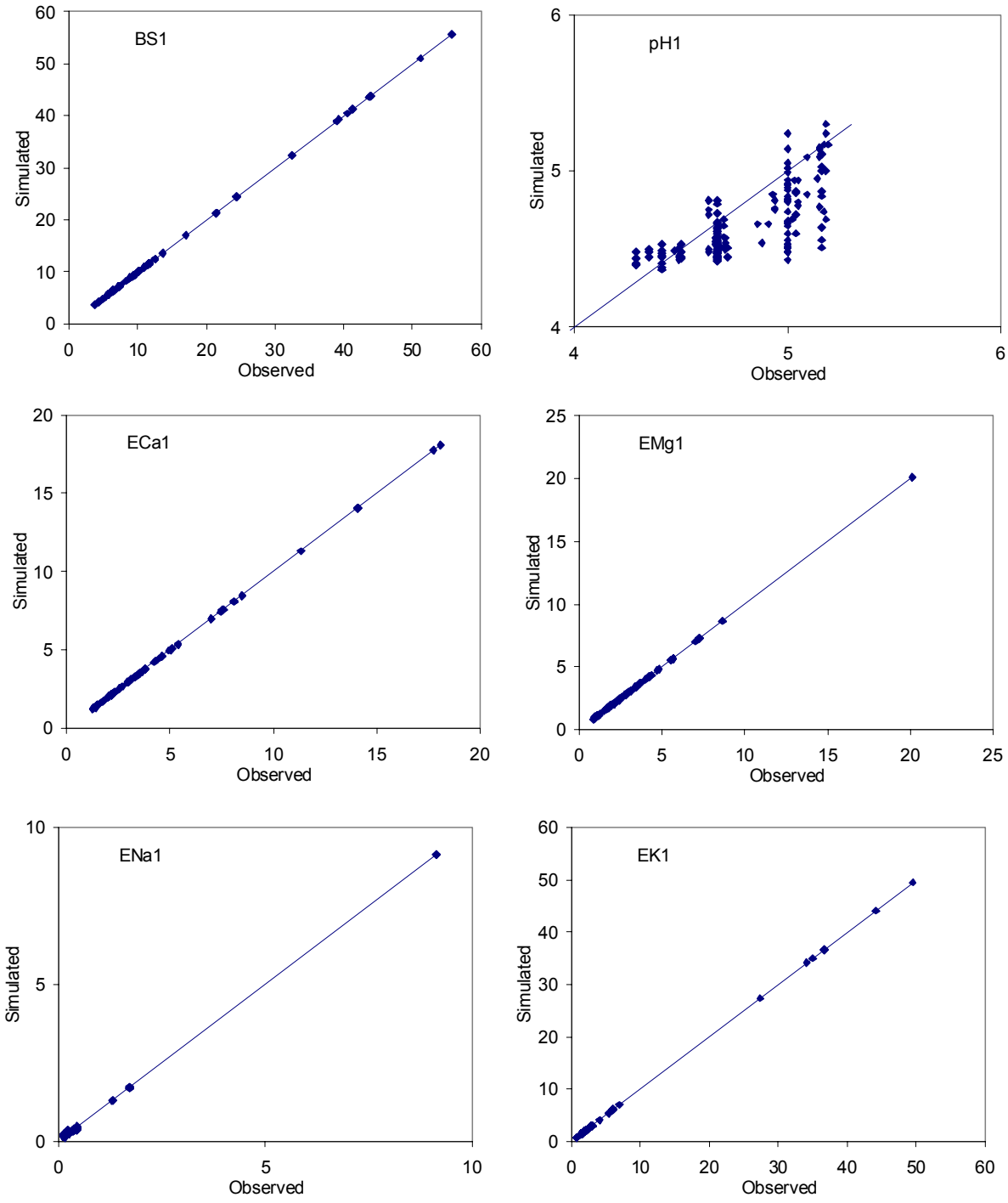

Figure I-2. Comparison of simulated and observed soil variables for the calibration year at each SAMI site. Units are % of CEC. The number of sites is 164.