

Table 2: W. 35 (2)

FLDGRP	#	SITE ID	DATE	TIME	PH	COND	H mg/L	H(µeq)	CA mg/l	CA ueq	MG mg/l	MG ueq	NA mg/l	NA ueq
C95302	13	WTM302	5/1/95	12:01	3.96	62.5	0.11	109.65	0.11813	5.9065	0.01482	1.235	0.046	2.008734
C95302	15	WTM302	5/1/95		3.98	62.1	0.105	104.71						
C95302	16	WTM302	5/1/95		4.16	40.4	0.069	69.183	0.05856	2.928	0.00561	0.4675	0.02137	0.933188
C95302	17	WTM302	5/4/95		3.16	161	0.692	691.83	0.34164	17.082	0.07885	6.5708	0.09132	3.987773
C95302	39	WTM302	5/14/95		4	100	0.1	100	0.6053	30.265	0.294	24.5	1.6523	72.15284
C95302	85	WTM302	5/30/95	8:01	3.52	160	0.302	302						
C95302	88	WTM302	5/31/95	19:01	3.56	194	0.275	275.42	0.59498	29.749	0.10685	8.9042	0.10641	4.646725
C95302	138	WTM302	6/6/95	0:01	3.66	117	0.219	218.78	0.09554	4.777	0.02625	2.1875	0.0649	2.834061
C95302	164	WTM302	6/12/95	19:33	3.6	170	0.251	251.19	0.10905	5.4525	0.02625	2.1875	0.02743	1.197817
C95302	166	WTM302	6/12/95	22:01	3.29	393	0.513	512.86	0.3319	16.595	0.06331	5.2758	0.07482	3.267249
C95302	167	WTM302	6/12/95	23:01	3.24	365	0.575	575.44	0.45578	22.789	0.08256	6.88	0.08233	3.595197
C95302	168	WTM302	6/13/95	0:01	3.49	220	0.324	323.59	0.33626	16.813	0.06425	5.3542	0.05537	2.417904
C95302	170	WTM302	6/13/95	2:01	3.55	224	0.282	281.84	0.45776	22.888	0.07472	6.2267	0.05458	2.383406
C95302	180	WTM302	6/20/95	7:01	3.69	125	0.204	204.17	0.05649	2.8245	0.05387	4.4892	0.37826	16.5179
C95302	181	WTM302	6/20/95	8:01	3.69	127	0.204	204.17	0.06953	3.4765	0.06229	5.1908	0.41005	17.90611
C95302	186	WTM302	6/20/95	22:01	3.75	117	0.178	177.83	0.10522	5.261	0.03425	2.8542	0.0842	3.676856
C95302	254	WTM302	7/20/95	5:01	2.89	648	1.288	1288.2	1.7592	87.96	0.34347	28.623	0.0893	3.899563
C95302	255	WTM302	7/20/95	6:01	2.76	907	1.738	1737.8	3.1416	157.08	0.58624	48.853	0.14144	6.176419
C95302	261	WTM302	7/22/95	6:01	3.25	290	0.562	562.34	0.72339	36.17	0.08369	6.9742	0.0381	1.663755
C95302	262	WTM302	7/22/95	7:01	3.08	395	0.832	831.76	0.80751	40.376	0.10175	8.4792	0.04525	1.975983
C95302	290	WTM302	8/3/95	1:00	3.83	110	0.148	147.91	0.3096	15.48	0.3079	25.658	2.2424	97.9214
C95302	297	WTM302	8/4/95	6:01	3.87	89.6	0.135	134.9	0.26478	13.239	0.20818	17.348	1.4236	62.16594
C95302	298	WTM302	8/4/95	7:01	3.69	130	0.204	204.17	0.30674	15.337	0.24788	20.657	1.7843	77.91703
C95302	299	WTM302	8/4/95	8:01	3.27	342	0.537	537.03	0.9357	46.785	0.72135	60.113	4.7201	206.1179
C95302	358	WTM302	8/20/95	0:01	3.38	344	0.417	416.87	0.51884	25.942	0.16931	14.109	0.86341	37.70349
C95302	363	WTM302	8/22/95	6:01	2.75	844	1.778	1778.3	0.90389	45.195	0.16825	14.021	0.16738	7.30917
C95302	368	WTM302	8/24/95	0:01	2.81	1100	1.549	1548.8	2.0921	104.61	0.33259	27.716	0.59483	25.97511
C95302	369	WTM302	8/24/95	1:01	3	678	1	1000	1.0712	53.56	0.19586	16.322	0.51185	22.35153
C95302	371	WTM302	8/24/95	20:09	3.64	186	0.229	229.09	0.55228	27.614	0.1712	14.267	0.51656	22.55721
C95302	394	WTM302	9/2/95	0:01	3.21	508	0.617	616.6	2.083	104.15	0.38196	31.83	0.14406	6.29083
C95302	398	WTM302	9/2/95	4:01	3.35	329	0.447	446.68	1.7141	85.705	0.23638	19.698	0.08696	3.79738
C95302	492	WTM302	10/1/95	0:01	3.66	198	0.219	218.78	0.76028	38.014	0.51711	43.093	18.73	817.9039
C95302	545	WTM302	10/19/95		3.46	181	0.347	346.74	0.14261	7.1305	0.06155	5.1292	0.15633	6.826638
C95302	555	WTM302	10/24/95	21:01	3.59	148	0.257	257.04	0.79543	39.772	0.17185	14.321	0.59396	25.93712

K mg/l	K ueq	<	NH4	NH4 mg/l	NH4 ueq	<	SO4 m	SO4 ueq	<	NO3	NO3 mg/l	NO3 ueq	<	CL mg	CL ueq	<	NO2	NO2 m	NO2 ue
0.057	1.4615		0.17	0.21857	12.1429		7.26	151.25		0.75	3.334714	53.7857		0.123	3.465		0.01	0.0296	0.6429
			2	2.57143	142.857		7.47	155.63		0.8	3.551714	57.2857		0.2	5.634		0.01	0.023	0.5
0.04167	1.0685		0.16	0.207	11.5		4.96	103.33		0.6	2.639429	42.5714		0.108	3.042		0.01	0.0164	0.3571
5.2431	134.44		4.1	5.27143	292.857		16.2	337.5		2.06	9.122857	147.143		5.32	149.9		0.02	0.0526	1.1429
0.7306	18.733		4.93	6.33857	352.143		14.2	295.83		1.62	7.174286	115.714		2.64	74.37		0.01	0.0361	0.7857
			3.83	4.92429	273.571		21.5	447.92		2.3	10.18571	164.286		0.386	10.87		0.02	0.0526	1.1429
0.26538	6.8046		13.2	16.9714	942.857		29.6	616.67		2.69	11.91286	192.143		0.67	18.87		0.04	0.1183	2.5714
0.06944	1.7805		3.9	5.01429	278.571		14.6	304.17		1.26	5.58	90		0.394	11.1		0.01	0.023	0.5
0.11843	3.0367		0.91	1.17257	65.1429		17.4	362.5		1.37	6.067143	97.8571		0.4	11.27	<	0	0.0131	0.2857
0.28284	7.2523		3.18	4.08857	227.143		39.4	820.83		3.77	16.69571	269.286		1.04	29.3	<	0	0.0131	0.2857
0.24928	6.3918		2.88	3.70286	205.714		34.6	720.83		4.15	18.37857	296.429		1	28.17		0.01	0.0296	0.6429
0.29827	7.6479		1.83	2.35286	130.714		20.3	422.92		2.64	11.69143	188.571		0.739	20.82	<	0	0.0131	0.2857
0.22398	5.7431		1.91	2.45571	136.429		17.1	356.25		3.55	15.72143	253.571		1.01	28.45		0.02	0.069	1.5
0.09127	2.3403		0.73	0.93986	52.2143		12.1	252.08		1.24	5.491429	88.5714		1.43	40.28		0.01	0.023	0.5
0.66695	17.101		0.9	1.161	64.5		12.1	252.08		1.37	6.067143	97.8571		1.93	54.37		0.01	0.023	0.5
0.14033	3.5982		3	3.85714	214.286		13.7	285.42		1.59	7.041429	113.571		0.469	13.21		0.03	0.0887	1.9286
0.2535	6.5		15.5	19.9286	1107.14		50.3	1047.9		12.8	56.68571	914.286		2.18	61.41		0.1	0.3351	7.2857
1.0434	26.754		1.34	1.72286	95.7143		79.2	1650		16.2	71.74286	1157.14		4.95	139.4		0.14	0.4534	9.8571
0.39007	10.002		3.8	4.88571	271.429		35.2	733.33		6.17	27.32429	440.714		1.32	37.18		0.04	0.1216	2.6429
0.08009	2.0536		4.69	6.03	335		33.5	697.92		3.45	15.27857	246.429		0.763	21.49		0.02	0.0756	1.6429
0.17493	4.4854		12.6	16.2	900		10.3	214.58		1.1	4.871429	78.5714		4.44	125.1		0.03	0.092	2
0.10138	2.5995		0.26	0.32786	18.2143		8.75	182.29		0.56	2.471143	39.8571		2.95	83.1	<	0	0.0131	0.2857
0.13256	3.399		0.39	0.50143	27.8571		13	270.83		0.86	3.790857	61.1429		3.7	104.2		0.01	0.0296	0.6429
0.65986	16.919		1.87	2.40429	133.571		36.6	762.5		2.54	11.24857	181.429		10.4	293		0.02	0.069	1.5
0.2398	6.1487		6.6	8.48571	471.429		18.6	387.5		3.84	17.00571	274.286		2.11	59.44		0.02	0.0526	1.1429
0.27791	7.1259		6.05	7.77857	432.143		98.3	2047.9		10.7	47.38571	764.286		2.22	62.54		0.02	0.0493	1.0714
0.411	10.538		7.84	10.08	560		71.8	1495.8		21.8	96.54286	1557.14		6.29	177.2		0.02	0.0756	1.6429
0.24908	6.3867		7.51	9.65571	536.429		53.1	1106.3		11.5	50.92857	821.429		3.05	85.92		0.02	0.0723	1.5714
0.30914	7.9267		4.76	6.12	340		23.8	495.83		3.96	17.53714	282.857		1.1	30.99		0.01	0.023	0.5
0.62576	16.045		9.2	11.8286	657.143		65.5	1364.6		6.86	30.38	490		1.37	38.59		0.01	0.0296	0.6429
0.25495	6.5372		4.13	5.31	295		26.1	543.75		7.04	31.17714	502.857		1.02	28.73		0.01	0.0427	0.9286
0.42482	10.893		8.66	11.1343	618.571		26.1	543.75		3.97	17.58143	283.571		4.79	134.9		0.03	0.0887	1.9286
0.20603	5.2828		0.9	1.15971	64.4286		17.8	370.83		2.15	9.521429	153.571		0.581	16.37		0.01	0.0296	0.6429
0.2237	5.7359		0.26	0.33814	18.7857		16.5	343.75		2	8.857143	142.857		1.39	39.15		0.02	0.0559	1.2143

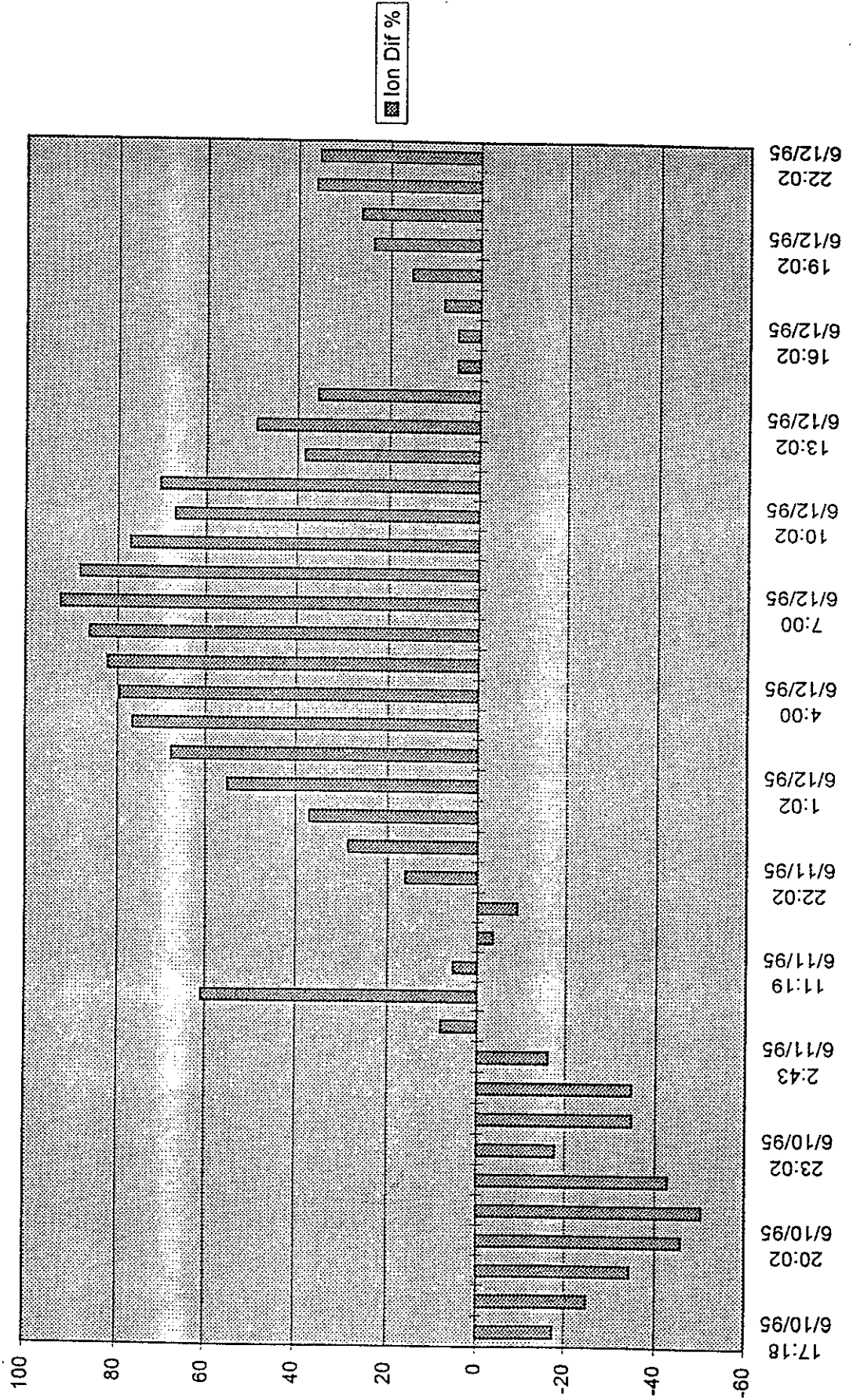
CATIONS	ANIONS	ION BAL%	IBfla	ACT H IO	PRE H ION	PRED CO	COND DI	ION DIFF	SO4/NO3
132	208	-22.35	0	110	200	14.6	6	-2	2.812085
	219	-100.00	0	105		12.1	8.7	-5	2.716646
86	149	-26.81	0	69.2	100	15.5	4.4	-4	2.427293
1150	635	28.85	0	692	200	20.6	8.8	-10	2.293689
596	486	10.17	0	100	-10	30	18	20	2.556584
	623	-100.00	0	302		76.7	2.6	8	2.726449
1270	828	21.07	0	275	-200	15.2	8.2	6	3.209418
508	405	11.28	0	219	100	10.8	8	9	3.37963
328	472	-18.00	0	251	400	8.39	11	2	3.70438
772	1120	-18.39	0	513	900	8.98	12	2	3.048187
820	1050	-12.30	0	575	800	13.8	12	-8	2.431727
486	632	-13.06	0	324	500	25.9	8.9	-10	2.24274
455	638	-16.74	0	282	500	44.7	7.7	-10	1.40493
282	381	-14.93	0	204	300	41.6	8.3	-10	2.846102
312	404	-12.85	0	204	300	23.1	9.1	-8	2.576034
193	412	-36.20	0	178	400	8.55	12	5	2.513103
2520	2020	11.01	0	1290	800	10.3	12	-3	1.146159
2070	2950	-17.53	0	1740	3000	19.5	8.8	-7	1.425926
888	1210	-15.35	0	562	900	27.7	6.3	-6	1.663965
1220	966	11.62	0	832	600	21	10	-4	2.832126
1190	418	48.01	0	148	-600	27.6	-0.73	-9	2.731061
248	305	-10.31	0	135	200	39.8	-1	-7	4.573626
349	436	-11.08	0	204	300	31.6	-0.95	-4	4.429517
999	1240	-10.76	0	537	800	27.9	-1.1	-2	4.202756
971	721	14.78	0	417	200	39.6	-3.6	-4	1.41276
2280	2870	-11.46	0	1780	2000	51.9	-1.6	-7	2.679517
2280	3230	-17.24	0	1550	2000	44.1	-0.45	-8	0.960627
1630	2010	-10.44	0	1000	1000	51.4	-1.8	-3	1.346739
640	810	-11.72	0	229	400	66.9	0.15	-7	1.752946
1430	1890	-13.86	0	617	1000	69.4	5.9	-6	2.784864
856	1080	-11.57	0	447	700	70.4	5.8	-8	1.081321
1740	962	28.79	0	219	-600	44.2	2.7	-3	1.917506
435	541	-10.86	0	347	500	53.7	1.8	-7	2.414729
361	526	-18.60	0	257	400	58.7	3.5	-8	2.40625

4.2.2 Response to Ion Balance Problem at Whiteface Mountain, 1995

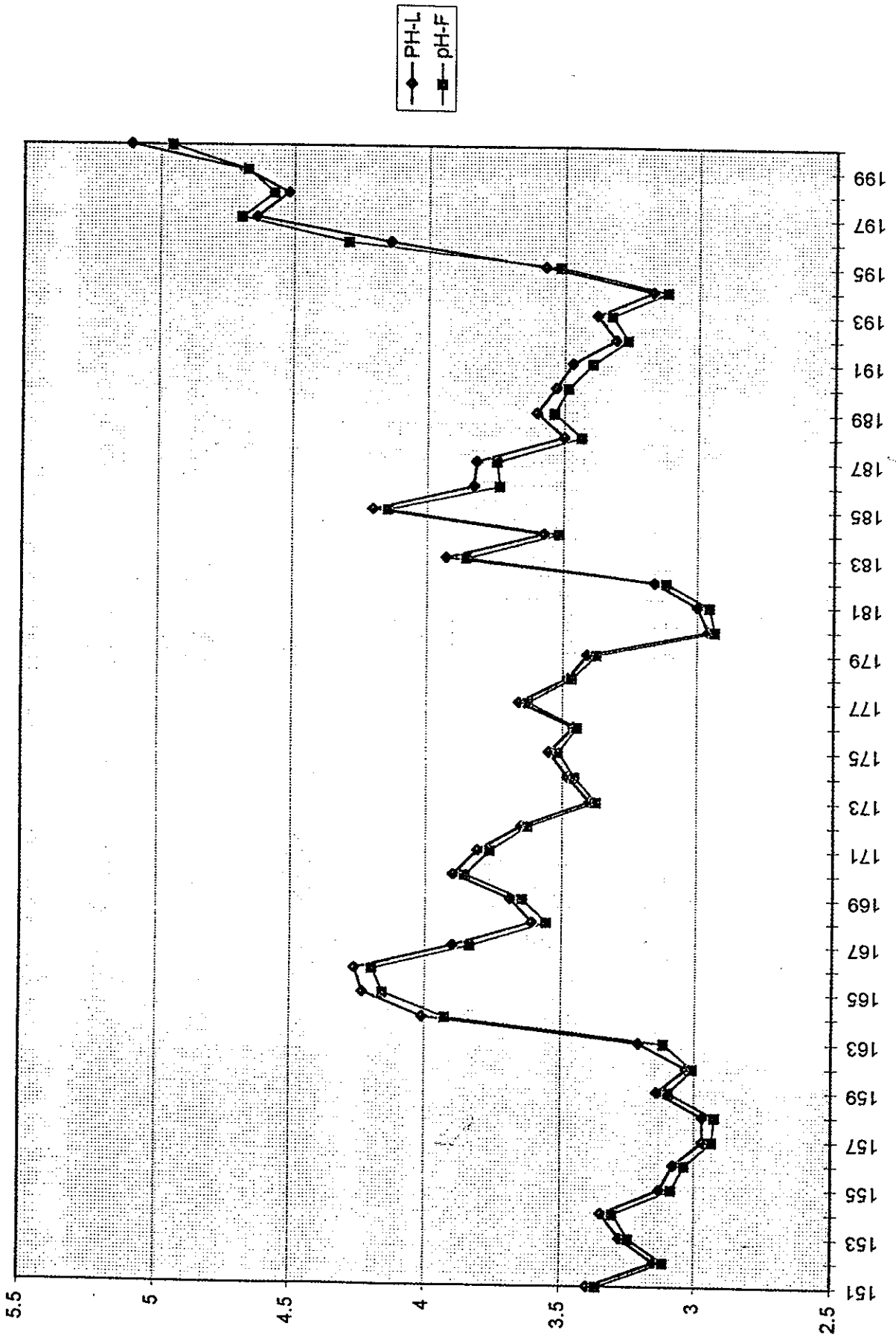
An investigation was made of the excessive ion imbalance among the Whiteface Mt. samples. We discovered that a batch of pH data from the ESE laboratory was suspect in that (1. many of the imbalances occurred around June 10-12, shown in Figure 4.2.2-1, and (2. field pH measurements correlated closely with ESE lab pH measurements except during the same period (see Figures 4.2.2-2 through 4. After these suspicious samples were reanalyzed, the new pH values matched the field measurements and fell into acceptable ion balance limits. When the new pH values were included in the Whiteface database, the ion balance criteria (as stated in section 4.2.1) were met.

After this corrective action, a regression of Field pH vs. ESE lab pH was performed on the Whitetop and Whiteface data for 1995. Both show a high degree of correlation, shown in Figures 4.2.2-3 and 4.2.2-4.

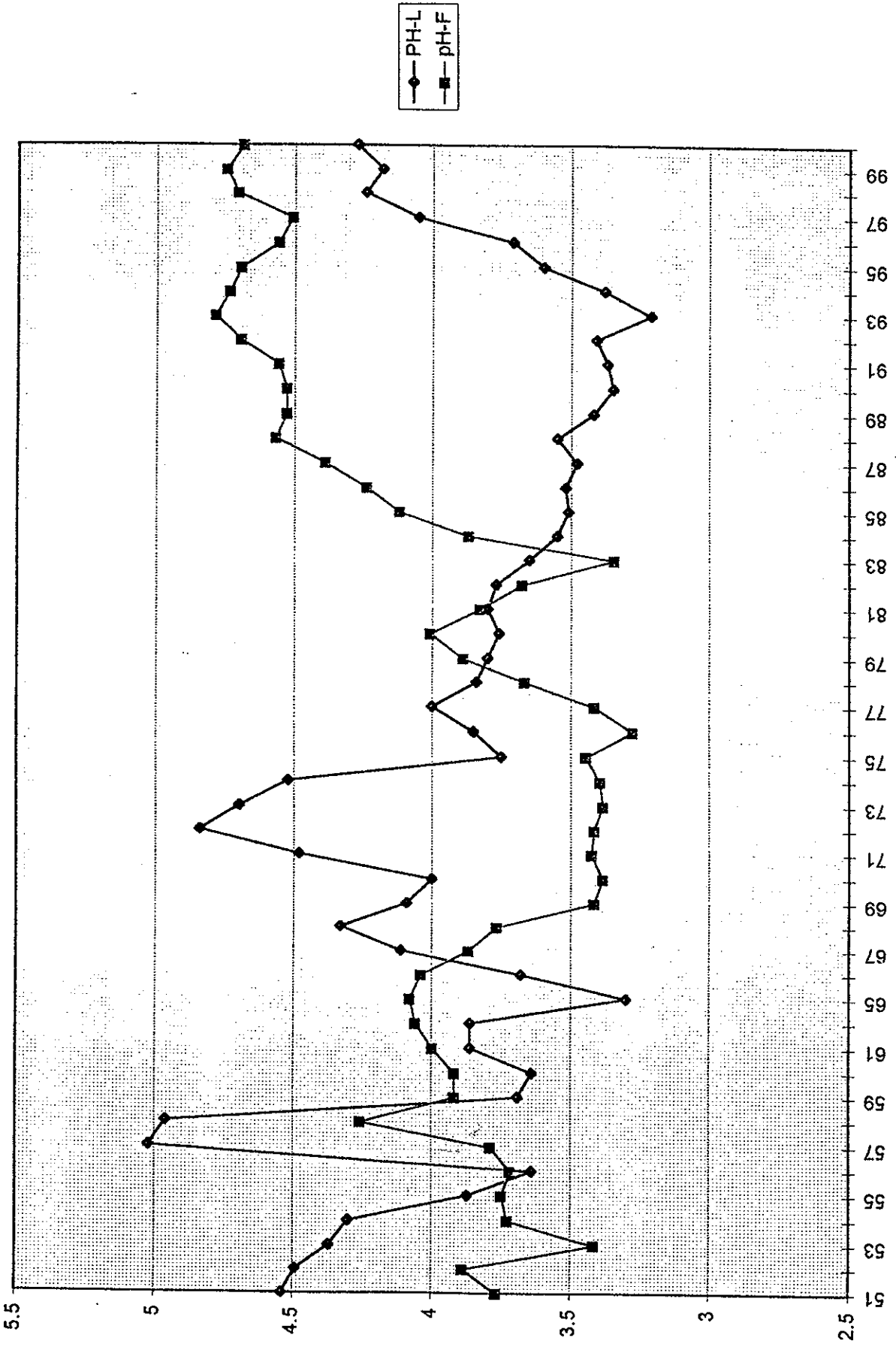
Ionic Diff. % June 10-12, WFace



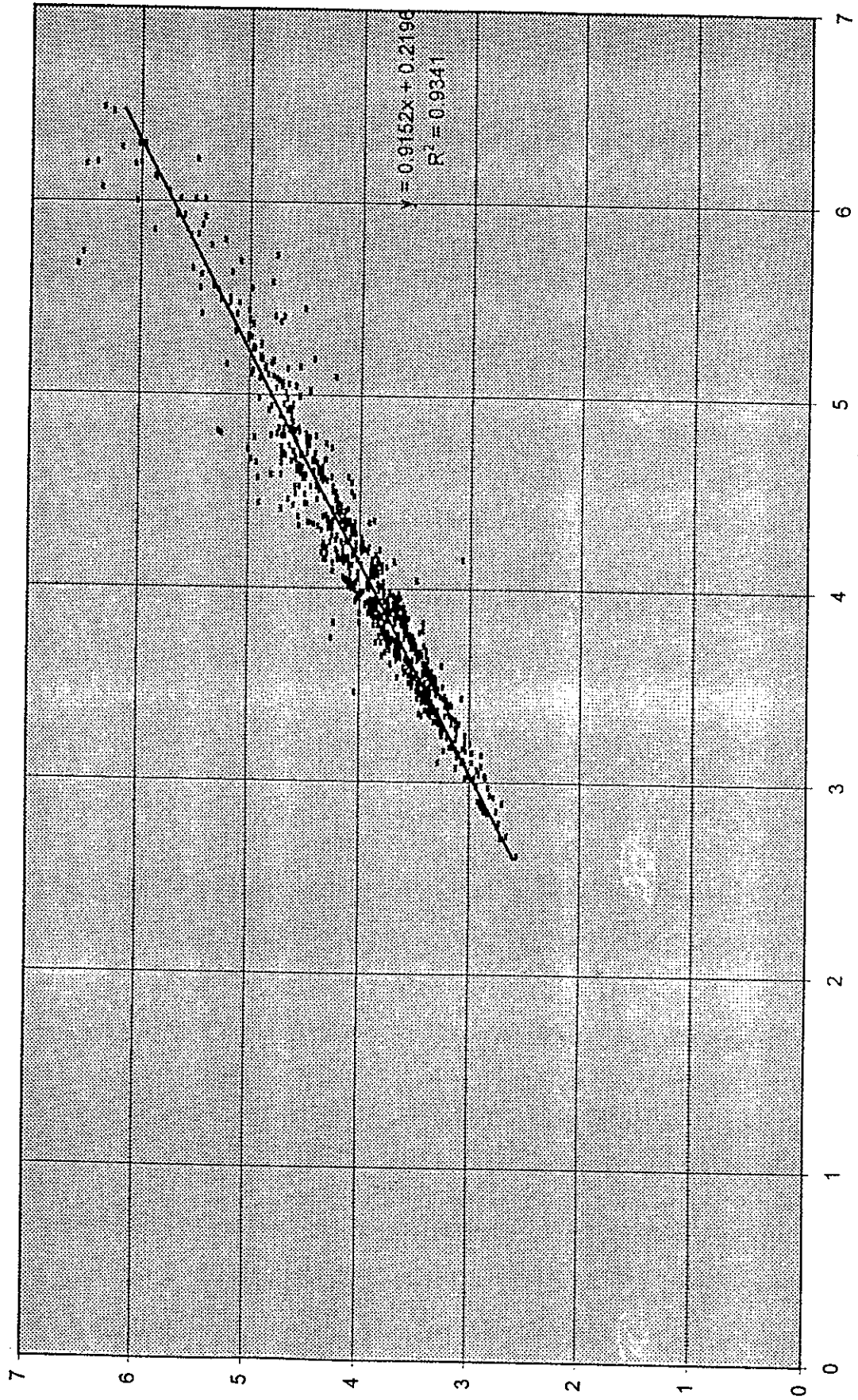
pH Lab vs. Field 4



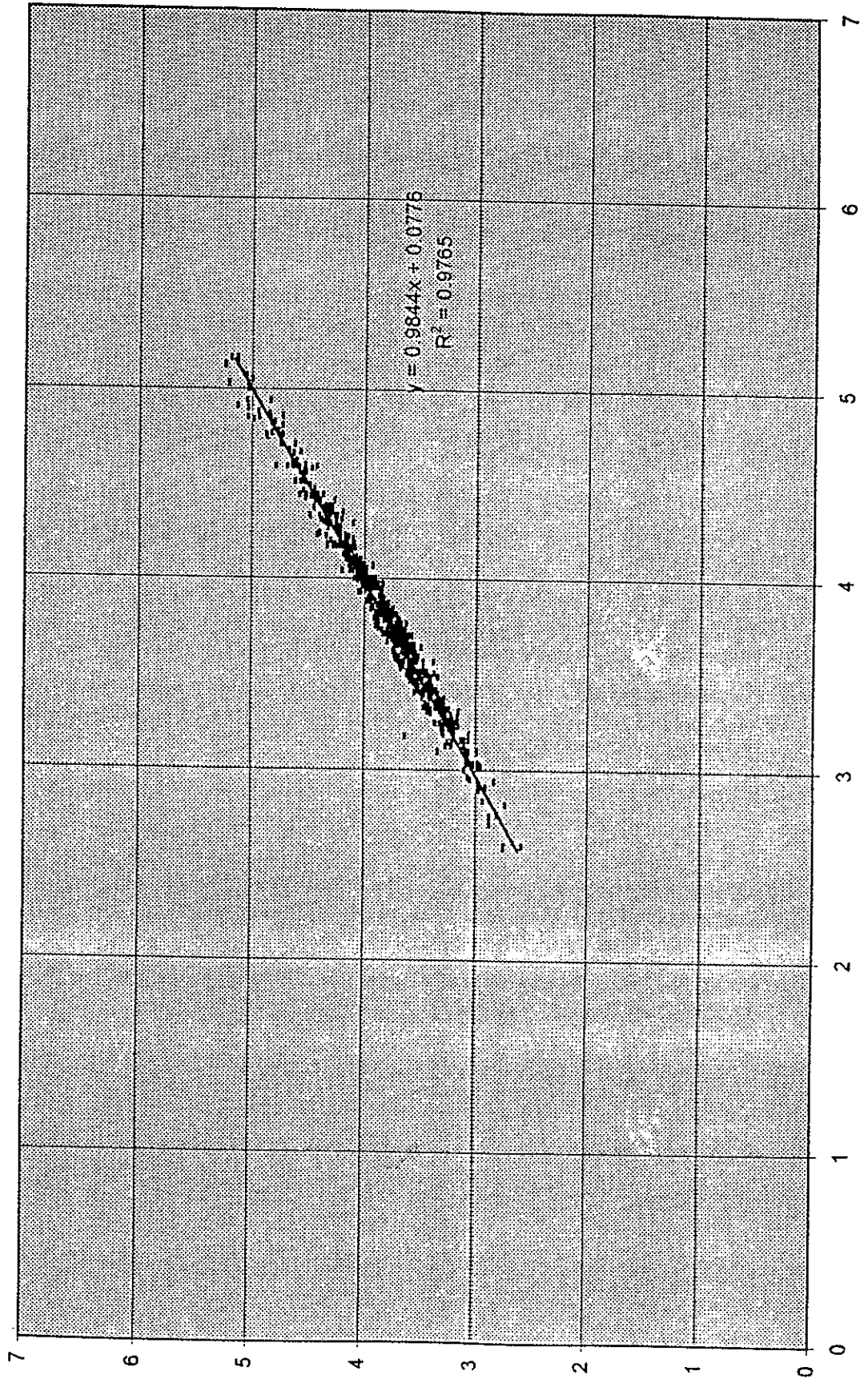
pH Lab vs. Field 2



Lab pH vs. Field pH, Whiteface Mt., 1995



Lab pH vs Field pH, Whitetop Mt., 1995



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11. DATA

The following are the results of the chemical analyses of cloudwater samples in 1995 from the three operational MADPro sites. Samples are sorted by site and are then in chronological order. All concentrations are reported as mg/L and $\mu\text{eq/L}$. Nitrogen containing compounds are also reported as mg/L N. The entire database for 1994 and 1995 is available on diskette.

MADPro Monthly Cloud Frequency (1994-95)
Whiteface Mountain

