

**CAMECO RESOURCES
CROW BUTTE OPERATION**

86 Crow Butte Road
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June 18, 2010

Mr. Keith I McConnell, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8-F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Source Materials License SUA-1534
Docket No. 40-8943
SM 6-23, SM6-28, and SM8-28 Monitor Well Excursions

Dear Mr. McConnell:

On June 16, 2010 during routine biweekly water sampling of Cameco Resources, Crow Butte Operation (CBO) shallow monitor wells SM6-23, SM6-28, and SM8-28, the upper control limits (UCL) were exceeded. The multiple parameter UCL's for alkalinity and conductivity were exceeded in SM6-23. The multiple parameter UCL for alkalinity and the single parameter UCL for conductivity were exceeded in SM6-28. The single parameter UCL's for conductivity and chloride were exceeded in SM8-28. As required by License Condition 11.2 of Source Materials License SUA-1534, a second sample was collected from each well within 48 hours and analyzed for the three excursion indicator parameters. The results of the second samples also exceeded the UCL's as described above.

CBO notified Mr. Ron Burrows of the excursions at 3:00 PM on June 17, 2010 by telephone, as required in License Condition 9.2. Laboratory results of the sample analysis for the affected wells are attached. In addition, graphs are attached for the three excursion indicator parameters and water levels that cover the period from October 7, 2009 to June 17, 2010.

CBO believes that the apparent excursions are due to increased groundwater levels caused by the significant amount of precipitation at the facility this spring including 5+ inches of rain in the week preceding the collection of these samples. This conclusion is supported by the following indications:

1. The water level in each well has increased steadily throughout the spring, with a marked increase during the last two weeks. All three wells are located in an area of high groundwater near the springs that form the source of English Creek. Groundwater quality in this area is under the influence of surface water.
2. While the excursion indicators in each well has increased significantly, the levels still do not approach

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the levels we would anticipate seeing in the event of a true excursion of mining solutions.

3. Sixteen other shallow monitor wells located in Mine Units 6, 8 and 10 are also showing increases in water levels and one or more of the indicator parameters. These include two wells that went on excursion earlier this spring (SM6-20 and SM8-6). All of these wells are located in close proximity to English Creek. Historical operating data indicates that the excursion parameters are affected by high water levels in the shallow monitor wells located along English Creek.

4. Earlier in the spring, SM6-20 and SM8-6 (both located in close proximity to English Creek) were placed on excursion status. As summer approached and conditions began to dry, the indicator parameters in SM6-20 and SM8-6 began to trend back toward normal levels naturally. Then, following the large precipitation event mentioned earlier, the indicator parameters in both wells spiked up sharply. This demonstrates how surface water/high water levels can influence some of the wells in the English Creek drainage.

CBO will increase the sampling frequency for SM6-23, SM6-28, and SM8-28 to weekly until three consecutive weekly samples are below the exceeded UCL. CBO will then continue weekly sampling for an additional three weeks after this goal has been achieved. If the wells do not exceed the UCL, they will be returned to normal status.

If you have any questions or require any further information, please do not hesitate to call me at (308) 665-2215 ext 114.

Sincerely,

CAMECO RESOURCES
CROW BUTTE OPERATION

Larry Teahon

Manager of Safety, Health, Environment, and Quality

Enclosures: As Stated

cc: Mr. Ronald Burrows - NRC
Mr. Joe Brister - Director of Safety, Health, Environment and Quality
CBO File

W2

Crow Butte Project Monitor Well Laboratory Report

Sample Date 6/16/2010
Analysis Date 6/16/2010

Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
CM10-28	316	461	384	1850	2736	2280	184	265	221
CM10-29	313	461	384	1860	2808	2340	188	281	234
CM10-30	318	454	378	1860	2678	2232	181	253	211
CM10-31	317	446	372	1850	2678	2232	184	253	211
CM8-19	315	461	384	1850	2909	2424	184	278	232
CM8-20	317	467	389	1840	3038	2532	184	305	254
CM8-21	314	449	374	1860	2952	2460	184	261	217
CM8-22	317	461	384	1860	2966	2472	184	266	222
CM8-23	318	455	379	1850	2938	2448	188	258	215
CM9-11	304	445	371	1830	2707	2256	188	284	236
CM9-12	305	444	370	1860	2866	2388	199	321	268
CM9-13	300	442	368	1840	2707	2256	191	279	233
CM9-14	315	461	384	1920	2923	2436	199	327	272
CM9-15	301	432	360	1850	2736	2280	190	279	233
CM9-16	316	444	370	1900	2678	2232	195	268	223
CM9-17	307	441	367	1860	2678	2232	199	268	223
SM6-23	262	314	262	580	691	576	8	23	19
SM6-24	218	310	258	500	672	560	7.4	24	20
SM6-25	210	324	270	550	696	580	13	24	20
SM6-26	206	308	257	470	726	605	6	24	20
SM6-27	220	317	264	500	677	564	6.9	23	20
SM6-28	335	351	293	870	778	648	18	24	20
SM7-17	181	209	174	400	539	449	3.9	30	25
SM7-18	140	217	181	340	513	427	3.9	23	19
SM7-19	145	212	176	350	599	499	4.3	38	31

Sample Date 6/16/2010
 Analysis Date 6/16/2010

Crow Butte Project Monitor Well Laboratory Report

Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
SM7-20	148	228	190	340	583	486	2.3	28	23
SM7-21	146	216	180	340	534	445	3.9	27	23
SM7-22	147	217	181	340	644	536	2.5	54	45
SM7-23	177	278	232	450	850	708	4.3	59	50
SM7-24	188	259	216	590	809	674	10	45	37
SM7-25	158	202	168	360	645	538	2.8	52	44
SM8-26	224	317	264	590	720	600	12	24	20
SM8-27	232	353	294	540	706	588	7.8	22	19
SM8-28	260	328	274	1080	801	667	28	24	20
SM8-29	233	338	282	580	763	636	12	26	22

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Sample Date 6/17/2010
Analysis Date 6/17/2010

Crow Butte Project Monitor Well Laboratory Report

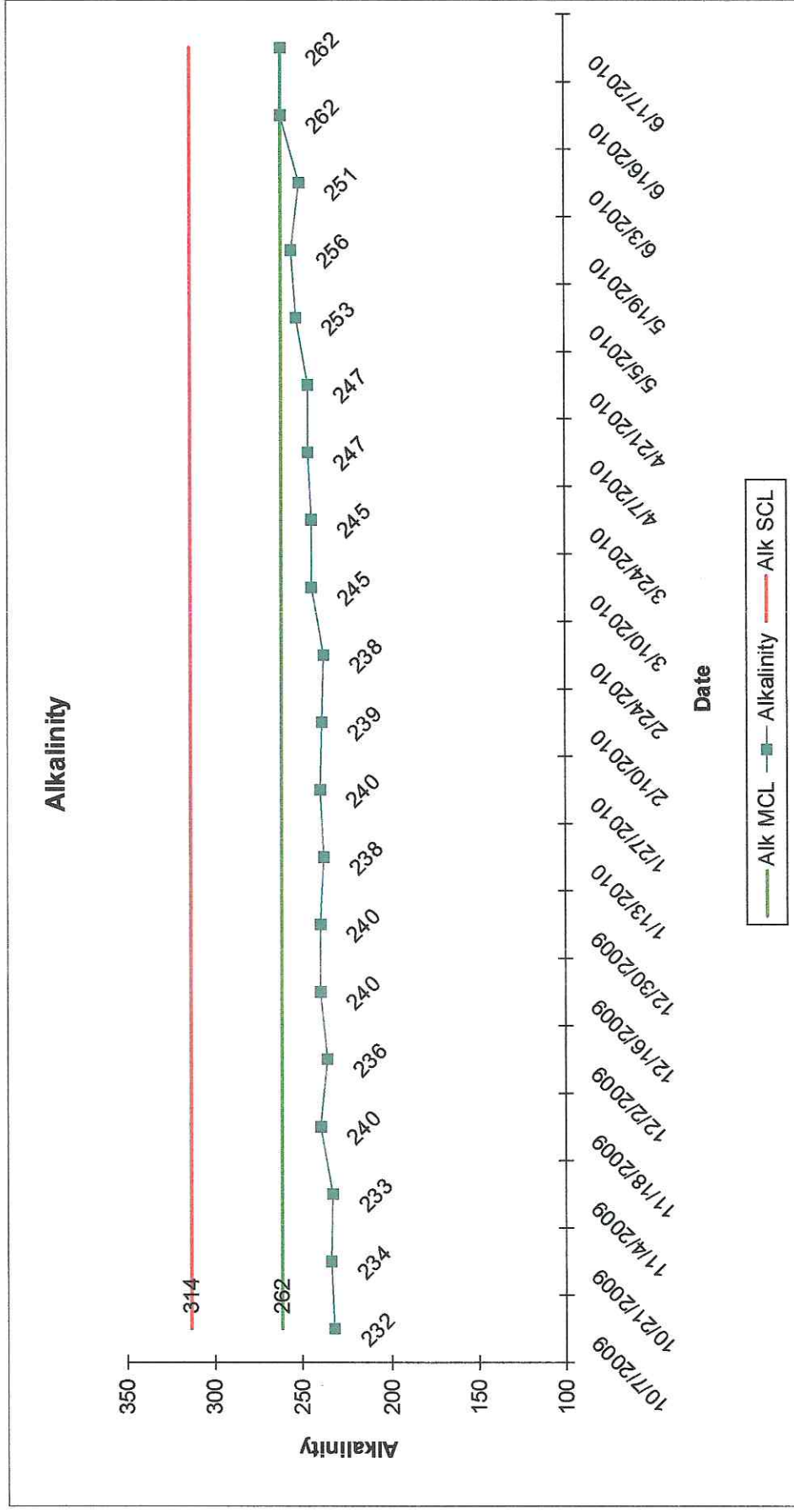
Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
CM3-5	317	433	361	2030	2814	2345	204	318	265
CM3-6	298	441	367	1960	2799	2333	195	300	250
CM5-1	312	462	385	1930	2884	2404	191	304	253
CM5-2	304	448	373	1890	2860	2383	188	297	247
CM5-3	308	449	374	1880	2949	2458	188	324	270
CM5-4	311	454	378	1890	2896	2413	191	305	254
CM5-5	310	455	379	1890	2880	2400	191	297	247
CM6-1	287	432	360	1890	3168	2640	191	334	278
CM6-10	298	429	358	1960	2952	2460	199	327	272
CM6-4	297	441	367	1950	2837	2364	195	289	241
CM6-5	297	416	347	2050	2923	2436	206	294	245
CM6-6	299	444	370	1950	2894	2412	195	301	251
CM6-7	286	403	336	1950	2822	2352	191	281	234
CM6-8	297	445	371	1960	2923	2436	191	305	254
CM6-9	287	428	356	1950	2866	2388	191	285	238
SM2-1	196	305	254	540	865	721	16	56	47
SM2-2	170	314	262	480	1210	1008	12	63	53
SM2-3	198	344	287	570	969	808	19	37	31
SM6-1	207	325	271	550	903	752	7.8	47	39
SM6-10	201	317	264	490	838	698	9.2	35	29
SM6-17	235	353	294	490	798	665	4.6	42	35
SM6-2	206	291	242	560	1008	840	11	85	71
SM6-23	262	314	262	580	691	576	7.4	23	19
SM6-28	322	351	293	840	778	648	17	24	20
SM6-3	201	295	246	550	844	703	12	43	36

Sample Date 6/17/2010
Analysis Date 6/17/2010

Crow Butte Project Monitor Well Laboratory Report

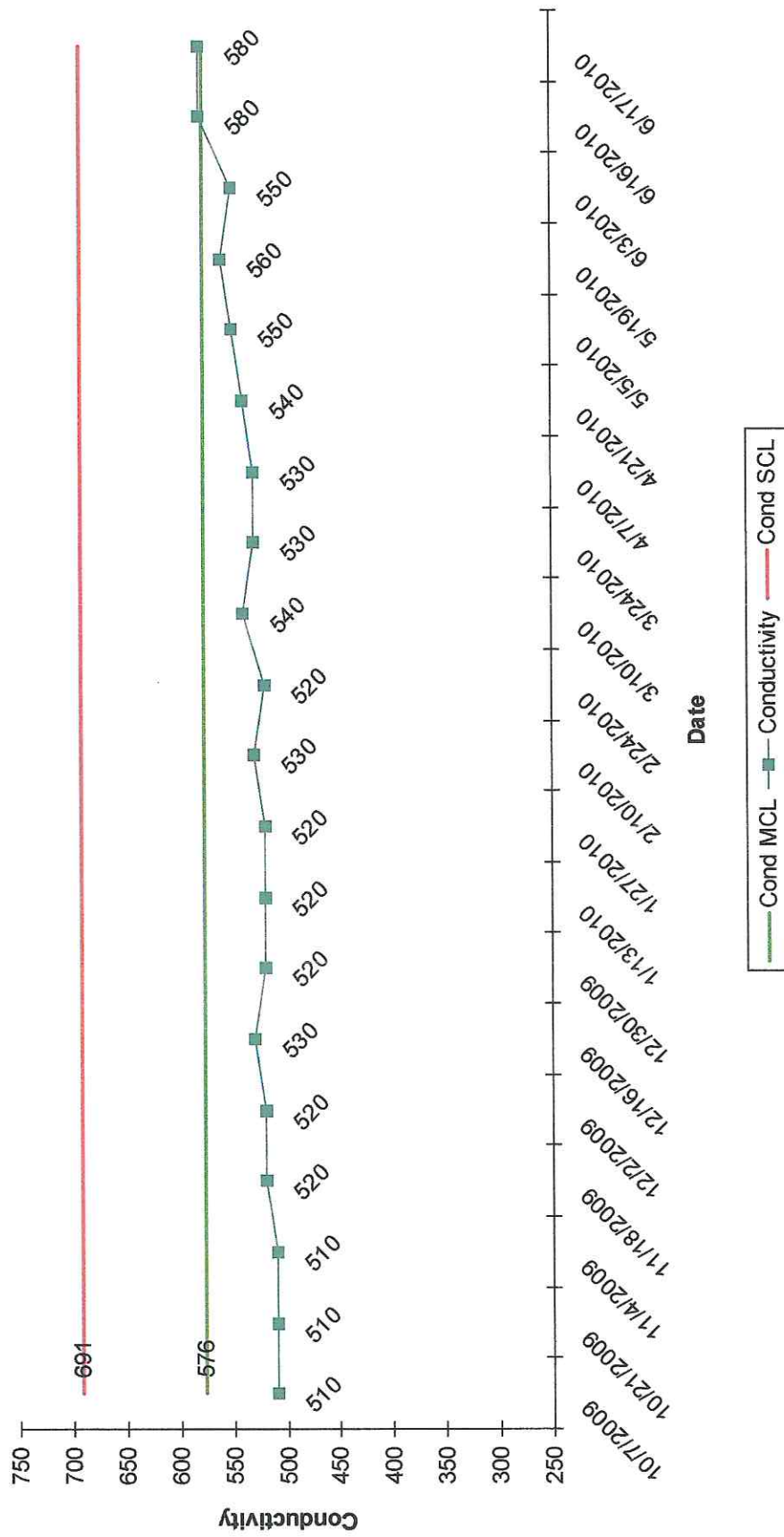
Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
SM6-4	206	310	258	530	804	670	8.5	32	27
SM6-5	210	314	262	520	770	642	7.8	26	22
SM6-6	224	334	278	480	711	593	2.8	24	20
SM6-7	227	343	286	500	779	649	6.4	39	32
SM6-8	205	311	259	490	770	642	5.7	36	30
SM6-9	222	336	280	490	815	679	5.3	51	42
SM8-28	258	328	274	1060	801	667	28	24	20
SM9-1	173	255	212	440	648	540	4.8	31	26
SM9-2	163	230	192	400	665	554	4.6	72	60
SM9-3	163	239	199	390	605	504	3.2	29	24
SM9-4	150	230	192	370	562	468	2.5	26	22
SM9-5	141	206	172	310	446	372	3.2	22	18
SM9-6	143	216	180	310	461	384	1.8	22	19
SM9-7	166	239	199	410	590	492	3.5	25	21
SM9-8	167	230	192	400	701	584	2.8	106	88
SM9-9	155	235	196	380	634	528	5.7	50	42

SM6-23

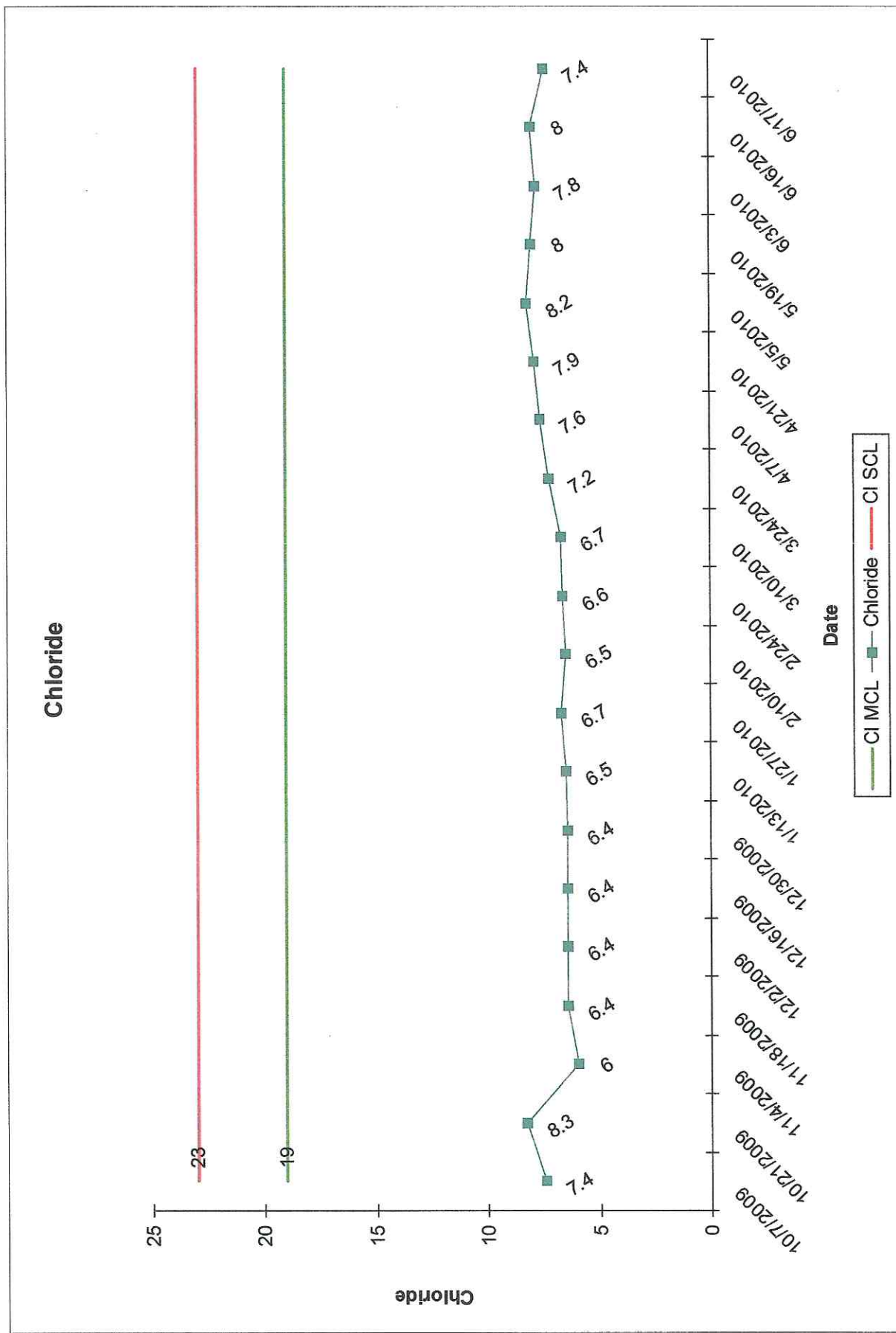


SM6-23

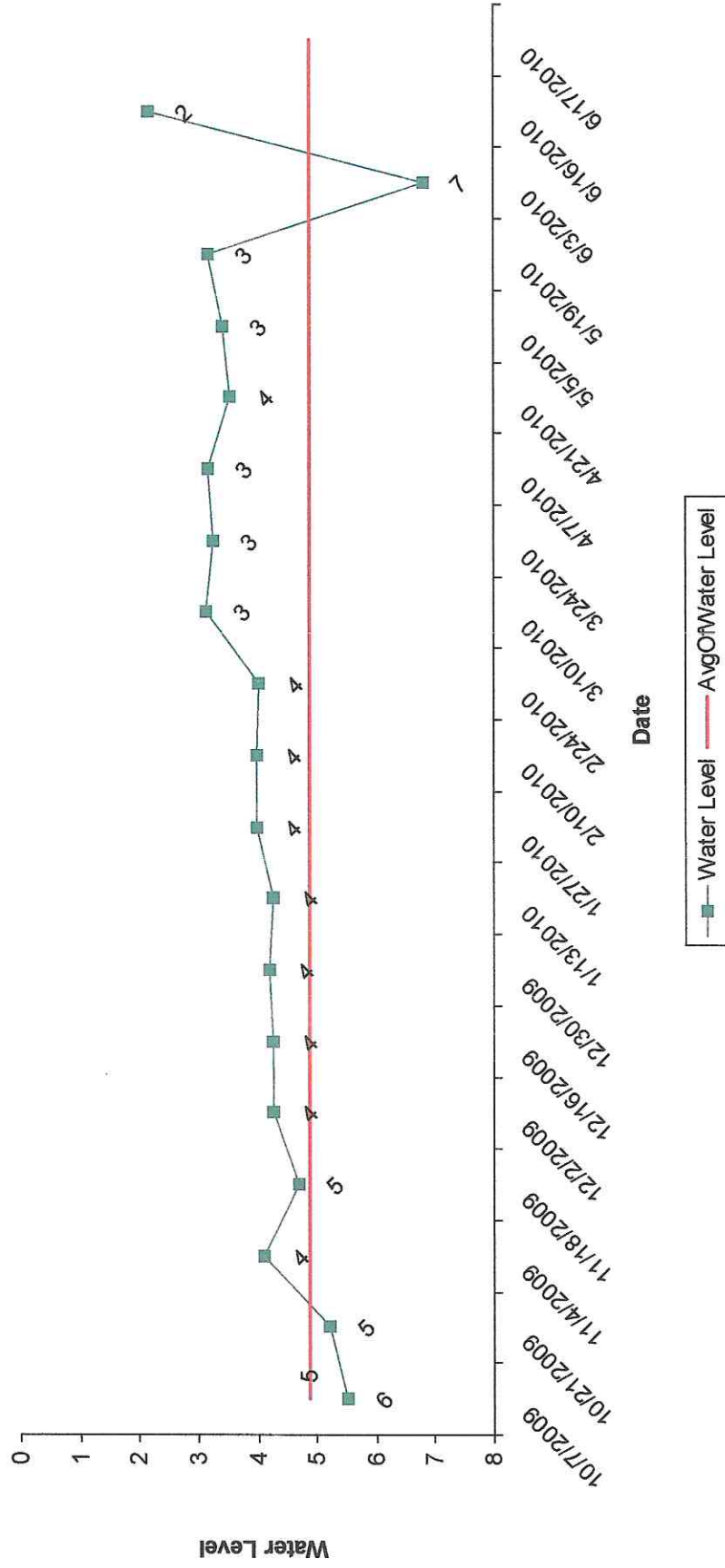
Conductivity



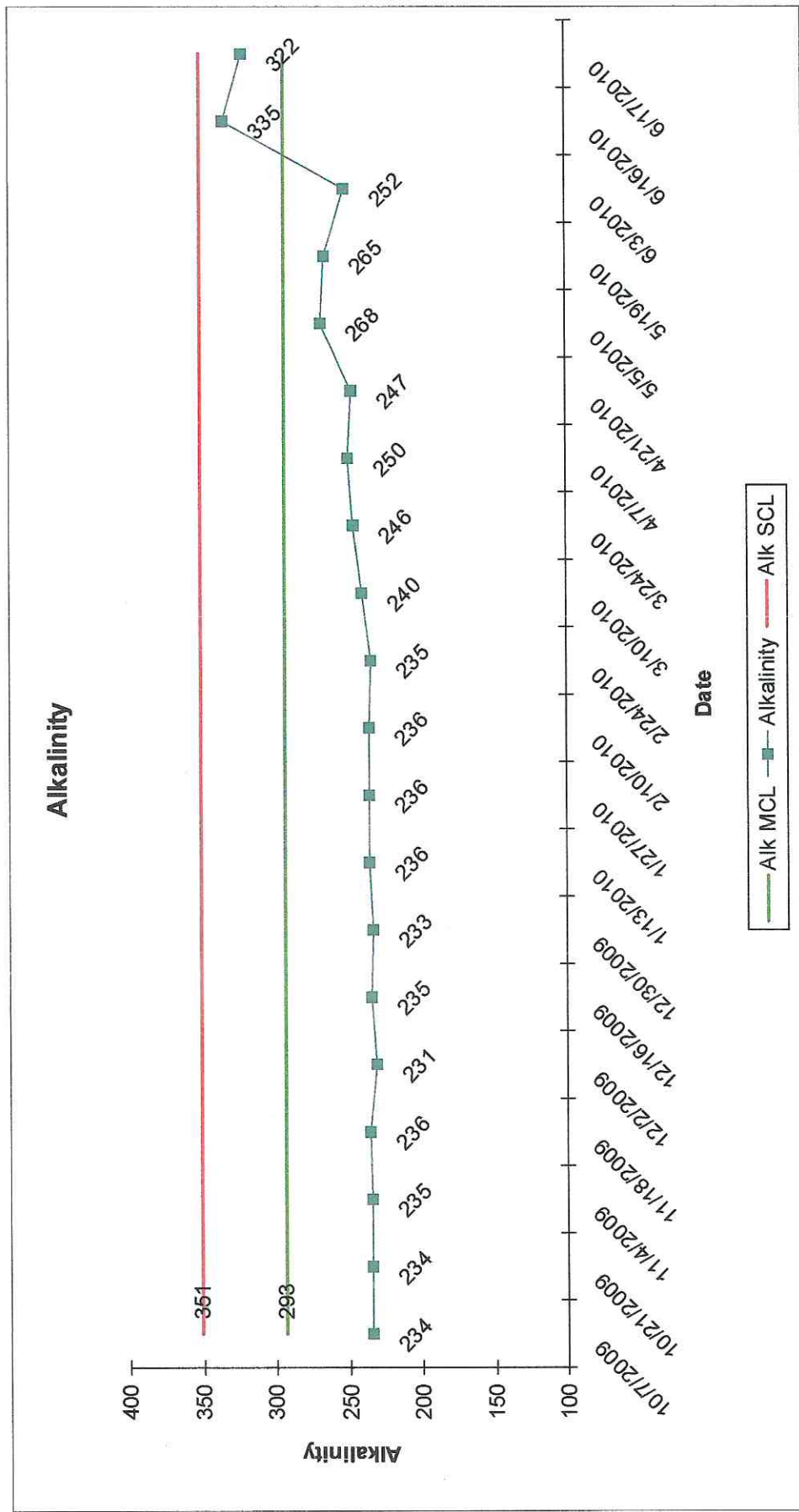
SM6-23



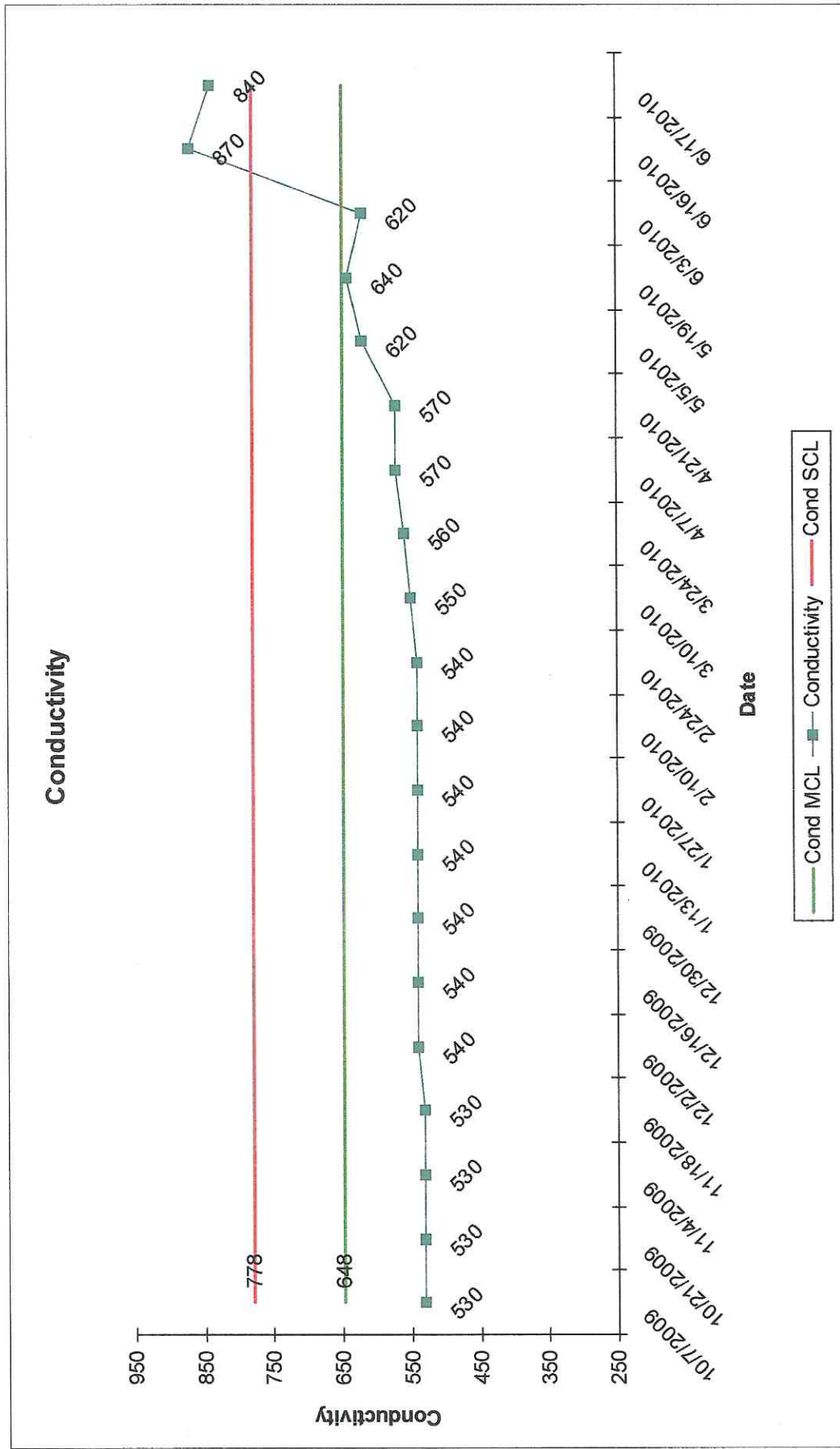
Water Level



SM6-28

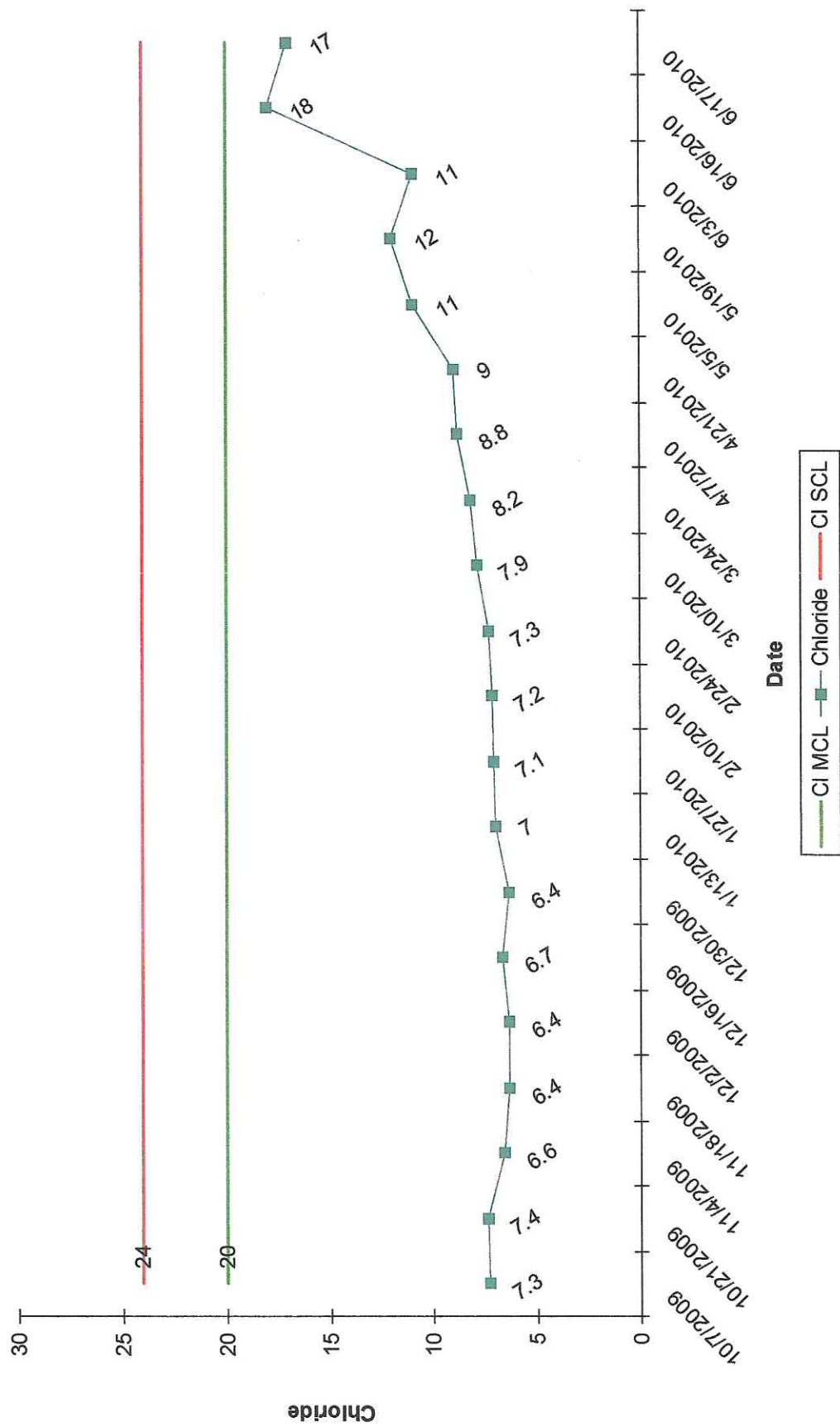


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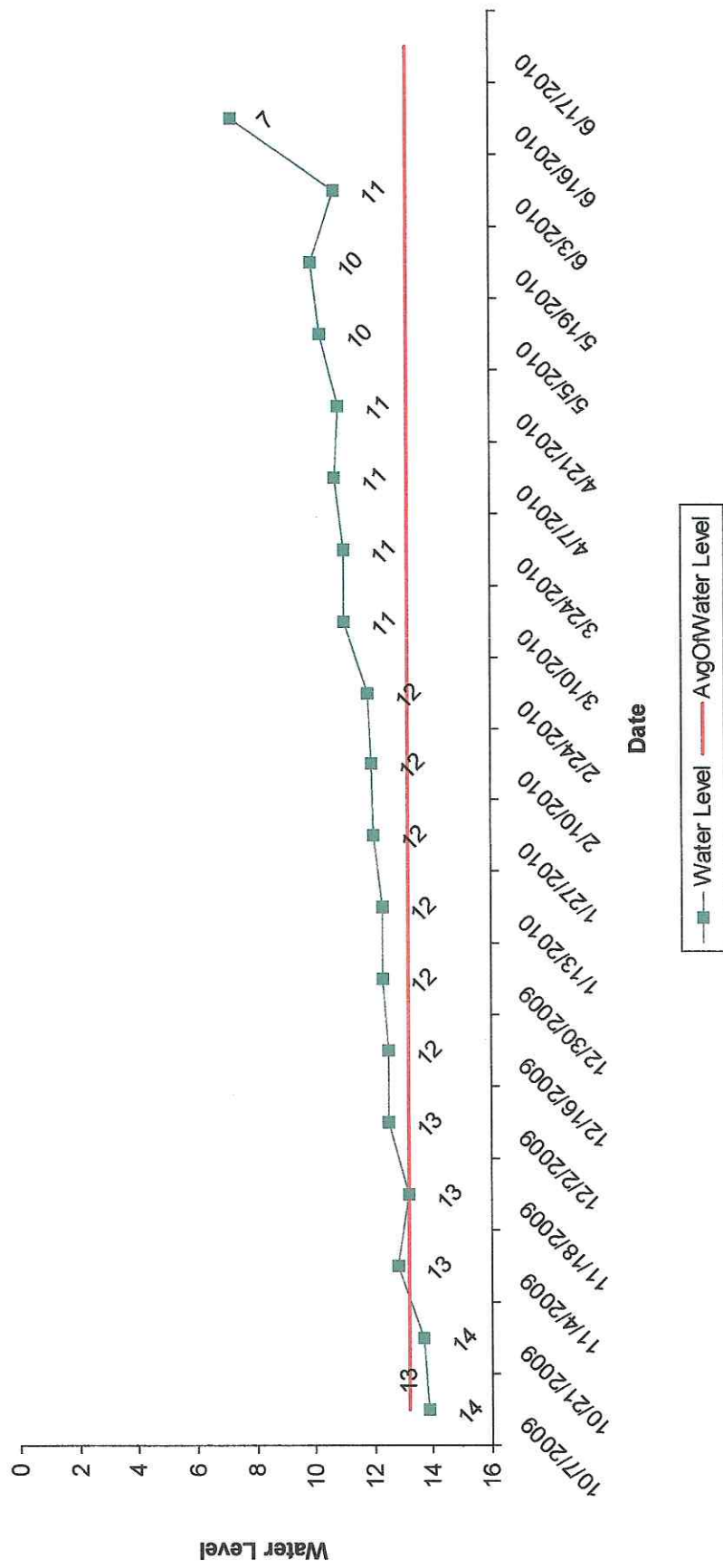


SM6-28

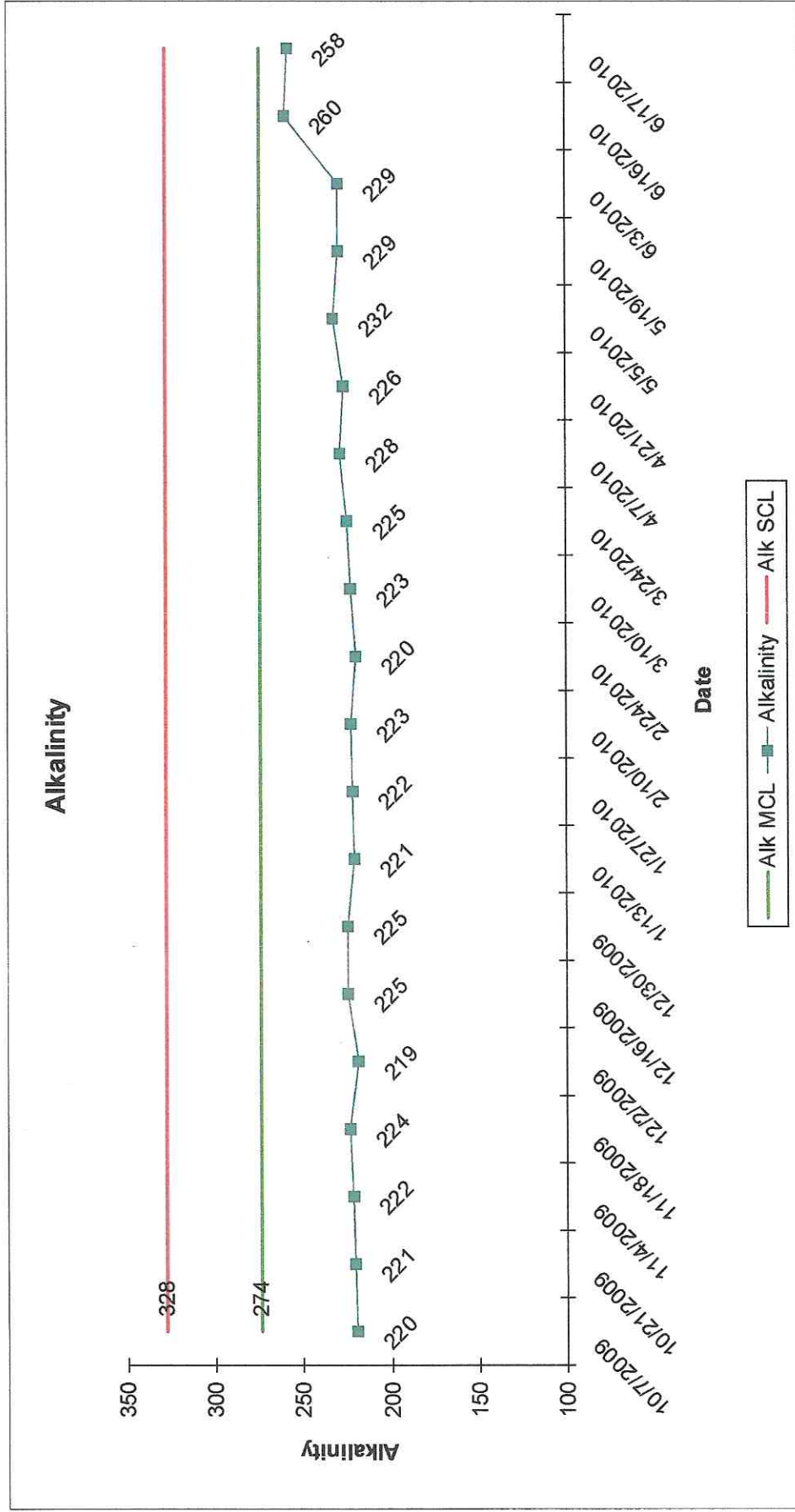
Chloride



Water Level

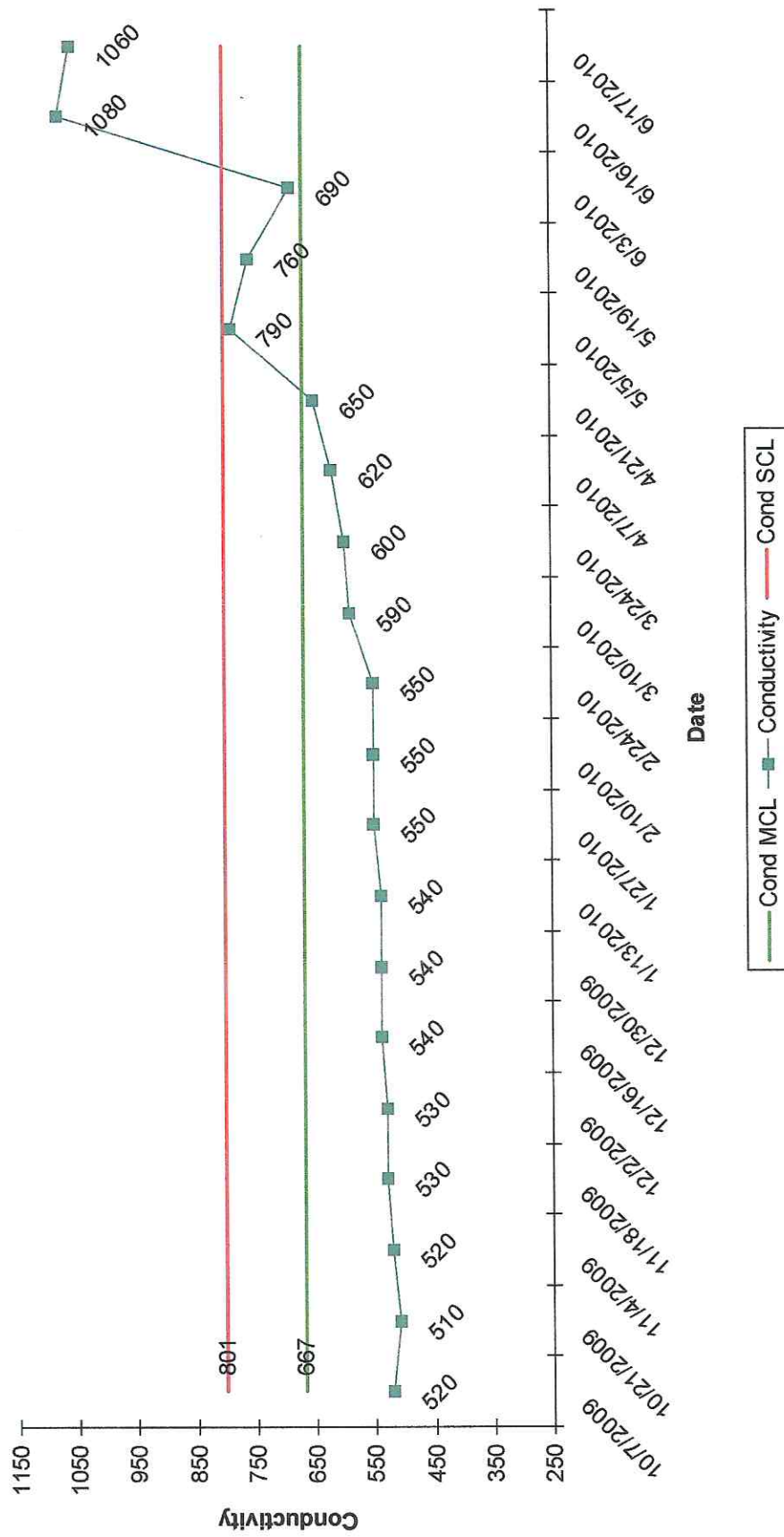


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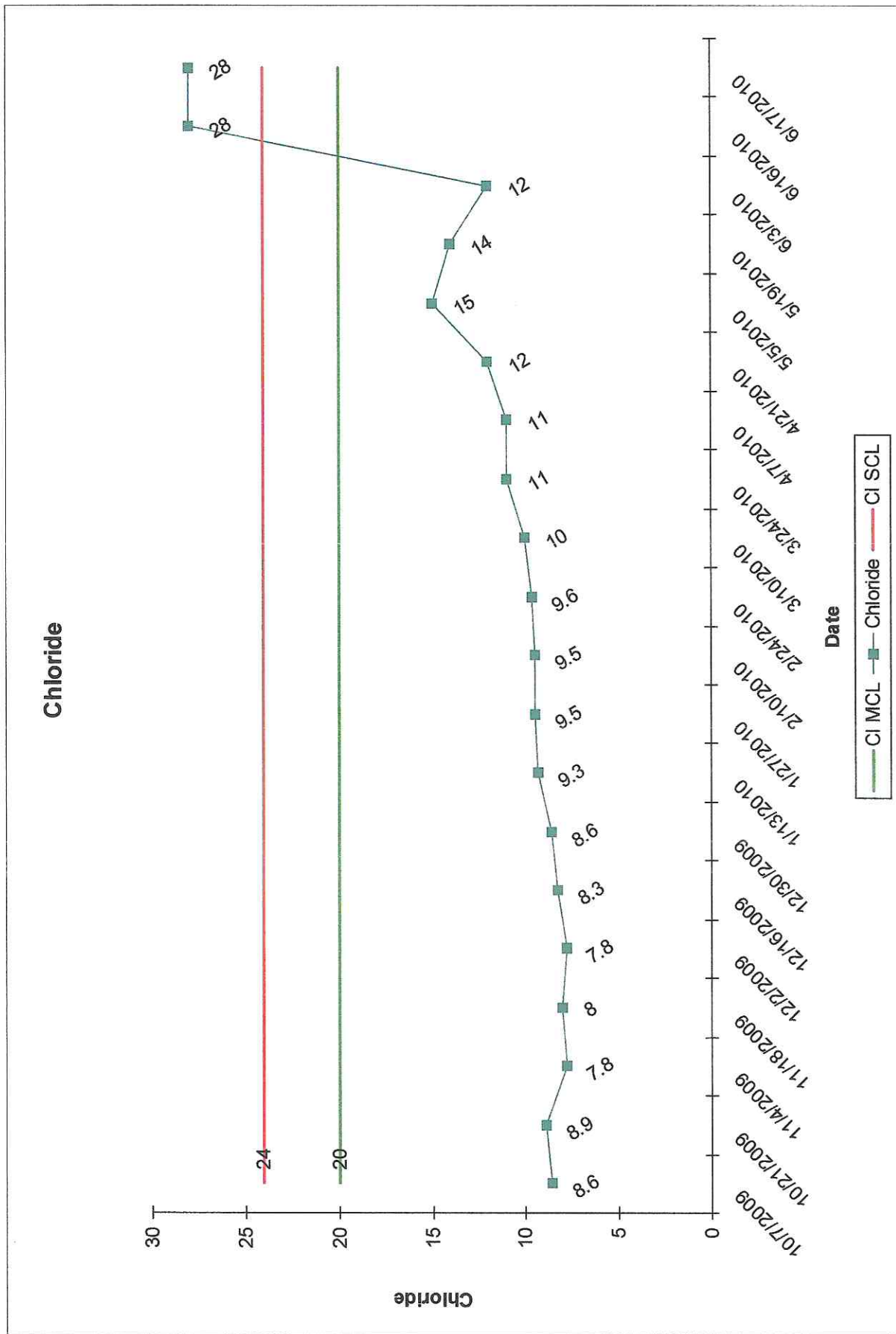


SM8-28

Conductivity



SM8-28



SM8-28

Water Level

