

Appendix B: 2004 Newman Lake Water Quality Data

From "Newman Lake Annual Water Quality Report And Microfloc Alum Injection System Performance Update", Moore et al, WSU, Feb. 2005

Table 1. Temperature profiles in Newman Lake North Station, 2004. All values in degrees Celcius.

Depth (m)	3/26	4/16	5/11	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	6.9	11.9	15.0	16.4	23.0	24.0	25.9	23.9	21.2	19.6	17.0	16.5	11.4
1	6.9	11.8	15.0	16.4	22.0	22.7	25.0	23.6	21.0	19.6	16.3	15.9	11.0
2	6.9	11.7	15.0	16.3	20.2	22.3	24.4	23.0	21.0	19.5	16.2	15.8	10.8
3	6.9	11.5	14.9	16.2	18.4	21.6	23.9	22.9	20.9	19.5	16.1	15.8	10.7
4	6.8	10.9	14.9	16.1	17.9	21.0	23.6	22.7	20.8	19.3	15.9	15.8	10.5
5	6.8	9.6	14.9	16.0	17.4	20.5	22.6	22.2	20.7	19.0	15.7	15.7	10.5
5.5		9.3		15.5		20.1				19.0			

Table 2. Temperature profiles in Newman Lake Mid-lake Station, 2004. All values in degrees Celcius.

Depth (m)	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	6.5	11.1	16.0	16.6	22.8	23.4	24.5	24.1	21.1	19.5	16.0	15.9	11.2
1	6.4	11.1	16.0	16.6	22.9	22.8	24.3	23.9	21.1	19.5	16.1	15.8	11.2
2	6.3	11.0	15.9	16.6	20.9	22.7	23.9	23.7	21.1	19.4	16.0	15.8	11.1
3	6.3	10.3	15.5	16.4	18.9	21.8	23.8	23.2	21.1	19.4	16.0	15.7	11.0
4	6.4	10.1	15.3	16.1	18.4	21.1	23.6	22.6	21.1	19.3	16.0	15.7	11.0
5	6.3	9.9	15.1	16.0	17.6	20.7	22.8	22.4	21.1	19.3	16.0	15.8	11.0
6	6.3	9.5	15.0	16.0	17.4	20.1	22.6	22.2	21.1	19.3	16.0	15.7	11.0
7	6.3	9.4	14.7	16.0	17.1	20.0	22.4	22.1	21.1	19.3	16.0	15.7	11.0
8	6.3	9.2	14.8	15.8	16.6	19.7	22.1	22.1	21.1	19.3	16.0	15.7	11.0
8.5			14.6	15.5		19.3	21.9			19.2	15.9		
9		9.1											

Table 3. Temperature profiles in Newman Lake South Station, 2004. All values in degrees Celcius.

Depth (m)	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/27
0	7.0	11.6	16.4	16.5	23.7	24.5	25.4	25.6	21.1	19.6	16.5	11.5
1	7.0	11.4	16.3	16.5	23.6	23.4	24.5	24.2	21.2	19.6	16.5	11.3
2	6.9	11.3	16.3	16.5	21.2	23.0	24.2	23.8	21.1	19.5	16.1	11.0
3	6.8	10.3	16.2	16.5	19.0	21.8	23.8	23.2	21.0	19.5	16.0	10.9
4	6.7	9.6	16.2	16.5	17.9	21.3	23.5	22.5	20.9	19.5	16.0	10.8
5	6.6	9.4	16.2	16.5	17.4	20.1	22.4	22.2	20.7	19.4	16.0	10.4
5.5			15.9	16.4					20.5	19.3		
6					17.1	19.9						

Table 4. Profiles of pH in Newman Lake North Station, 2004.

<i>Depth (m)</i>	3/26	4/16	5/11	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	6.3	7.1	7.7	7.2	7.7	8.0	7.3	8.0	7.1	7.8	7.7	7.4	7.3
1	6.3	7.5	7.8	7.3	8.1	8.3	7.4	8.0	7.1	7.8	8.0	7.4	7.2
2	6.4	7.5	7.8	7.3	8.8	8.3	7.5	7.9	7.1	7.7	8.1	7.3	7.2
3	6.4	7.4	7.7	7.3	8.6	7.9	7.4	7.5	7.1	7.7	7.7	7.3	7.1
4	6.4	7.3	7.7	7.2	8.1	7.3	7.2	7.1	7.1	7.6	7.2	7.2	7.1
5	6.4	7.1	7.4	7.1	7.2	6.7	6.4	6.6	7.1	7.2	7.1	7.2	7.1
5.5		6.8		6.8		6.4				6.7			

Table 5. Profiles of pH in Newman Lake Mid-lake Station, 2004.

<i>Depth (m)</i>	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	6.0	7.7	7.5	7.8	7.7	7.8	7.5	8.4	6.9	7.5	7.3	7.0	6.9
1	6.1	7.6	7.4	7.6	7.8	8.1	7.6	8.3	6.9	7.5	7.3	7.1	7.0
2	6.1	7.5	7.4	7.5	8.2	8.2	7.6	8.1	6.9	7.4	7.3	7.1	7.0
3	6.1	7.3	7.0	7.2	8.5	7.9	7.4	7.2	6.9	7.4	7.3	7.1	7.0
4	6.1	7.0	6.9	6.8	8.0	7.5	7.0	6.9	6.9	7.3	7.3	7.1	7.0
5	6.2	6.8	6.7	6.7	7.5	7.1	6.6	6.7	6.9	7.1	7.3	7.1	7.0
6	6.2	6.8	6.6	6.6	7.1	6.6	6.4	6.6	6.9	7.0	7.3	7.1	7.0
7	6.2	6.7	6.4	6.6	6.6	6.4	6.4	6.5	6.9	7.0	7.3	7.1	7.0
8	6.2	6.6	6.3	6.4	6.2	6.3	6.3	6.5	6.9	6.9	7.3	7.1	6.7
8.5			6.2	6.3		6.2	6.3			6.9	7.1		
9		6.5											

Table 6. Profiles of pH in Newman Lake South Station, 2004.

<i>Depth (m)</i>	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/27
0	6.5	6.8	7.4	7.4	7.7	8.1	7.7	8.5	7.3	7.9	7.8	7.0
1	6.5	7.3	7.4	7.4	7.8	8.2	8.0	8.6	7.0	7.9	7.8	7.0
2	6.5	7.5	7.4	7.4	8.3	8.1	7.9	8.5	7.0	8.0	7.7	7.0
3	6.5	7.4	7.4	7.4	8.7	8.2	7.6	7.5	7.0	8.0	7.5	7.0
4	6.4	7.1	7.4	7.4	8.1	7.6	7.0	6.9	7.0	7.9	7.3	7.0
5	6.4	7.0	7.3	7.4	7.3	6.7	6.3	6.5	6.9	7.8	7.0	7.0
5.5			7.0	7.3	6.8	6.4			6.8	7.4		

Table 8. Dissolved oxygen profiles in Newman Lake North Station, 2004. All values in mg/L.

<i>Depth (m)</i>	3/26	4/16	5/11	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	7.0	11.3	9.8	8.7	8.5	8.0	7.1	8.0	9.7	8.0	8.3	8.6	8.3
1	7.1	10.5	9.6	8.7	8.7	7.6	6.9	7.6	9.8	7.7	8.5	8.8	8.1
2	7.1	10.2	9.6	8.1	9.5	7.7	6.8	7.8	9.6	7.7	8.4	8.7	7.9
3	7.1	10.2	9.4	8.1	8.8	7.7	6.5	7.3	9.4	7.4	7.7	8.5	8.0
4	7.2	10.1	9.6	7.9	8.5	6.5	6.9	5.9	9.2	7.1	6.7	8.7	8.0
5	7.3	8.5	6.0	7.7	6.3	3.9	1.3	3.0	9.2	5.3	3.9	8.3	7.8
5.5		7.1		5.9		2.0				4.5			

Table 9. Dissolved oxygen profiles in Newman Lake Mid-lake Station, 2004. All values in mg/L.

<i>Depth (m)</i>	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	7.0	10.6	9.3	8.8	8.2	7.9	7.5	7.6	8.7	8.0	7.4	8.1	7.8
1	7.1	11.2	8.8	8.1	8.2	7.5	6.9	7.6	8.8	7.6	7.0	7.9	7.5
2	7.1	10.8	8.5	8.1	8.7	7.6	6.7	7.4	8.7	7.3	7.2	7.7	7.4
3	7.1	10.3	8.3	7.4	9.0	6.8	6.6	5.5	8.6	7.3	6.9	8.0	7.2
4	7.1	9.5	8.1	6.3	8.5	6.7	5.3	4.9	8.6	7.0	7.1	7.9	6.9
5	7.2	9.1	7.8	6.4	7.9	5.3	3.0	3.6	8.2	6.9	7.0	7.8	6.8
6	7.2	9.2	6.9	6.0	6.8	3.3	1.6	1.5	8.4	6.6	7.1	7.6	6.9
7	7.2	8.6	6.6	5.9	4.3	2.2	1.1	0.7	8.7	6.5	6.8	7.8	6.7
8	7.1	7.8	5.8	4.8	1.4	1.5	0.5	0.2	8.6	6.0	6.7	8.0	3.3
8.5		8.0	5.1	3.4		0.5	0.2			5.3	6.0		

Table 10. Dissolved oxygen profiles in Newman Lake South Station, 2004. All values in mg/L.

<i>Depth (m)</i>	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/27
0	6.9	10.6	9.2	8.8	8.2	7.8	7.7	8.2	9.4	8.3	8.1	7.5
1	6.9	10.7	8.9	8.6	8.2	7.7	8.0	7.9	8.9	8.0	8.0	7.7
2	6.9	10.6	8.9	8.1	8.5	7.2	7.8	7.8	8.8	8.0	7.5	7.4
3	7.0	10.7	8.9	8.1	9.0	7.5	6.9	6.2	8.6	8.0	7.1	7.5
4	6.9	9.1	8.9	8.2	8.6	6.8	5.1	2.8	8.5	7.9	6.1	7.6
5	6.9	9.0	8.5	8.1	7.1	2.7	1.2	1.7	8.4	7.3	5.3	7.6
5.5		7.4	8.2	7.8	5.2	1.5			8.5	6.7		

Figure 11. Dissolved oxygen profiles in Newman Lake North Station, 2004. All values expressed as percent of saturation.

<i>Depth (m)</i>	3/26	5/11	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	61.7	102.5	94.5	105.9	101.4	93.2	101.8	86.1	92.5	90.4	94.5	81.1
1	61.8	100.5	94.5	104.9	94.2	88.3	95.7	86.9	89.9	92.0	95.7	78.4
2	61.9	99.6	88.0	111.9	94.5	87.4	96.8	84.1	89.0	90.4	93.5	75.9
3	62.4	98.8	88.4	100.4	93.7	82.3	90.8	82.6	86.4	84.0	89.9	76.9
4	63.2	100.4	84.5	95.4	77.5	86.9	70.0	79.4	81.1	72.6	93.5	76.3
5	63.5	61.0	83.2	71.0	46.8	16.2	36.6	78.0	61.1	38.6	89.2	75.2
5.5			63.0		23.5				51.2			

Figure 12. Dissolved oxygen profiles in Newman Lake Mid-lake Station, 2004. All values expressed as percent of saturation.

<i>Depth (m)</i>	3/26	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	61.0	100.9	96.2	101.7	99.3	96.5	97.6	73.4	93.0	79.8	87.7	75.4
1	61.2	10.0	88.2	101.3	93.9	87.3	95.7	73.9	87.2	75.5	86.0	72.2
2	61.5	92.5	87.7	103.3	93.3	85.3	92.9	73.4	84.9	76.6	82.8	72.2
3	61.4	88.2	81.0	103.8	84.6	82.8	68.0	72.9	84.6	74.5	86.2	70.5
4	61.7	86.1	68.6	96.7	79.8	67.5	58.2	71.6	80.0	77.3	84.7	66.3
5	62.5	82.8	69.2	89.2	63.2	38.0	44.6	67.2	78.7	74.9	83.4	65.1
6	62.1	72.9	64.5	76.0	38.5	19.0	18.5	68.8	76.7	76.0	82.0	66.2
7	62.1	68.5	62.5	47.4	26.3	12.8	8.0	73.0	74.3	73.0	82.5	63.2
8	61.4	61.7	51.4	14.7	7.0	5.8	2.9	71.0	69.2	73.7	86.6	29.1
8.5		53.8	37.8		5.4	2.1			61.1	65.6		

Figure 13. Dissolved oxygen profiles in Newman Lake South Station, 2004. All values expressed as percent of saturation.

<i>Depth (m)</i>	3/26	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/27
0	61.0	100.4	96.4	103.7	99.9	100.2	107.0	82.4	95.6	88.4	10.2
1	60.8	97.4	93.7	103.4	96.3	103.2	100.1	76.5	92.9	87.4	10.4
2	60.7	97.0	87.9	102.2	89.7	99.7	98.5	73.9	92.9	82.3	10.5
3	60.7	96.6	88.1	103.3	91.7	87.6	77.2	71.6	92.5	76.1	10.4
4	60.5	96.8	89.7	95.8	81.2	64.0	34.5	71.0	91.3	66.2	10.4
5	60.1	91.5	88.0	82.0	32.1	14.0	20.2	68.5	85.6	56.5	10.5
5.5		88.5	85.4	56.9	17.4			69.7	77.6		

Figure 14. Specific conductivity profiles in Newman Lake North Station, 2004. All values expressed in micro Siemens per cm.

Depth (m)	3/26	4/16	5/11	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	49	47	46	46	47	48	49	49	50	49	49	50	47
1	49	47	46	46	47	48	49	49	50	49	49	50	47
2	48	47	46	46	47	48	49	49	49	49	49	50	47
3	48	47	46	46	46	48	49	49	50	49	49	50	47
4	48	48	45	46	46	48	50	49	50	49	49	50	47
5		48	46	46	48	49	50	52	49	49	49	50	47
5.5		48		46		51				49.3			

Figure 15. Specific conductivity profiles in Newman Lake Mid-lake Station, 2004. All values expressed in micro Siemens per cm.

Depth (m)	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/8	10/27
0	50	48	46	46	47	48	49	50	51	49	49	50	47
1	50	48	46	46	47	48	50	50	50	50	49	50	47
2	50	48	46	46	47	48	49	50	50	50	49	50	47
3	50	49	46	46	47	48	50	50	50	50	49	50	47
4	50	49	47	46	46	48	50	50	50	51	49	50	47
5	50	49	47	46	46	48	51	50	50	51	49	50	47
6	50	49	47	46	47	49	52	51	50	51	49	50	47
7	50	49	47	46	48	49	52	52	50	51	49	50	47
8	50	49	47	47	50	50	52	52	50	51	49	50	47
8.5			48	47		51	53			51	49		
9		49											

Figure 16. Specific conductivity profiles in Newman Lake South Station, 2004. All values expressed in micro Siemens per cm.

Depth (m)	3/26	4/16	5/27	6/10	6/24	7/14	8/4	8/12	8/26	9/9	9/23	10/27
0	50	48	46	46	47	48	50	50	50	50	49	47
1	50	48	46	46	47	48	50	50	50	50	49	47
2	50	48	46	46	46	48	49	50	50	49	49	47
3	50	48	46	46	47	48	49	49	50	49	49	47
4	50	49	46	46	46	48	50	50	50	49	49	47
4.5	50											
5		48	46	46	46	49	51	51	50	49	50	47
5.5			46	46	47	50			49	49		