



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

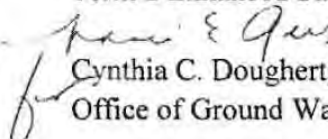
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WSG 180
Date Signed: February 4, 2010

MEMORANDUM

OFFICE OF
WATER

SUBJECT: OGWDW Review of Small System Monitoring Requirements Under the Long Term 2 Enhanced Surface Water Treatment Rule

FROM: 
Cynthia C. Dougherty, Director
Office of Ground Water and Drinking Water

TO: Water Division Directors

In the preamble to the final Long Term 2 Enhanced Surface Water Treatment Rule (LT2), the Agency stated that it would issue guidance to States on alternate indicators and *E. coli* trigger levels used to determine *Cryptosporidium* (*Crypto*) monitoring requirements under LT2 for small water systems (serving fewer than 10,000 people), if warranted, based on preceding LT2 monitoring by large public water systems. OGWDW has since conducted an evaluation of LT2 monitoring data and the *E. coli* trigger levels. Based on that evaluation, we are providing the attached guidance on alternative *E. coli* trigger levels which may result in the exclusion of many small systems from *Crypto* monitoring while providing public health protection. The alternative trigger levels suggested in the attached document are intended as guidance for States. States may choose to not allow these alternative levels to be used or may propose other alternative levels as described in LT2.

If you have any questions, you may contact me at (202) 564-3750, or have your staff contact Michael Finn at (202) 564-5261.

Attachment

Cc: Regional Branch Chiefs
Jim Taft, Association of State Drinking Water Administrators

**OGWDW Review of Small System Monitoring Requirements Under the Long Term
2 Enhanced Surface Water Treatment Rule**

Under the final Long Term 2 Enhanced Surface Water Treatment Rule (LT2), the State may approve an alternative to the small water system *E. coli* trigger levels of LT2 (source water mean *E. coli* levels less than 10 *E. coli*/100ml for lake/reservoir sources or less than 50 *E. coli*/100ml for flowing stream sources) if the alternative trigger levels provide a more accurate identification of whether the system will exceed 0.075 *Cryptosporidium* (*Crypto*) oocysts per liter. OGWDW analyzed the impacts of using alternative *E. coli* trigger levels and determined that alternative levels would more accurately identify systems required to meet the treatment technique requirements of LT2 and prevent a large number of small systems from incurring *Crypto* monitoring costs. OGWDW has reviewed the *E. coli* and *Crypto* source water data from 850 large systems that are already implementing LT2. Our analysis indicates that alternative *E. coli* trigger levels of 100 *E. coli*/100ml for both lake/reservoir and flowing streams provide more accurate identification of systems requiring *Crypto* monitoring and compliance with the LT2 treatment technique requirements. With the alternative trigger levels, we still expect that most systems with high *Crypto* levels in their source water would be required to monitor for *Crypto* and to meet the treatment technique requirements of LT2, if necessary.

Specifically, the alternative trigger levels are estimated to cause roughly a quarter of small systems (1,400 of 5,600) to monitor for *Crypto*, which we estimate would ultimately result in about 194 systems being required to meet the treatment technique requirements of LT2. The current trigger levels are estimated to cause nearly half of small systems (about 2,700 of 5,600) to monitor for *Crypto*, which we estimate would ultimately result in about 218 systems being required to meet the treatment technique requirements of LT2.

We estimate that 24 systems that would have been required to monitor for *Crypto* and then required to meet the treatment requirements of LT2 under the current LT2 triggers will not be required to meet the treatment technique requirements using the alternative levels. We estimate the alternative levels could exclude 1,300 systems from monitoring for *Crypto*, which translates to approximately \$17 million in monitoring cost savings. While there is uncertainty with the estimates, we also compared the accuracy at different levels of alternative trigger and determined that the accuracy would diminish for trigger levels above 100 *E. coli* per 100ml.

If the State chooses to allow the alternate trigger levels suggested in this guidance, documentation of that decision should be maintained by the Region. If the State proposes to approve other alternate trigger levels, that proposal must be described in the State's primacy application under 40 CFR 142.16 (n) (1). For States that choose to allow an alternative trigger level, the LT2 rule requires that the State notify the systems in writing and include the basis for

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the State's determination. In calculating the annual mean *E.coli* level for comparison with the trigger levels, individual *E.coli* results (every two weeks) should not be rounded and significant figures should be maintained in calculating the annual mean.

FLOWING STREAM									
Ecoli Trigger	Percent			Data Set Estimate (n = 395)			Total Systems Estimate (n = 3167)		
	Sensitivity	Required to Monitor	Monitored : Caught	Sensitivity	Required to Monitor	Monitored : Caught	Sensitivity	Required to Monitor	Monitored : Caught
0	100%	100%	14.2	26 / 26	395 / 395	395 : 26	208 / 208	3167 / 3167	3167 : 208
5	100%	85%	11.9	26 / 26	335 / 395	335 : 26	208 / 208	2685 / 3167	2685 : 208
10	100%	78%	10.8	26 / 26	307 / 395	307 : 26	208 / 208	2461 / 3167	2461 : 208
15	100%	72%	10.0	26 / 26	286 / 395	286 : 26	208 / 208	2293 / 3167	2293 : 208
20	96%	69%	9.9	25 / 26	273 / 395	273 : 25	200 / 208	2188 / 3167	2188 : 200
25	92%	65%	9.7	24 / 26	257 / 395	257 : 24	192 / 208	2060 / 3167	2060 : 192
30	92%	63%	9.3	24 / 26	247 / 395	247 : 24	192 / 208	1980 / 3167	1980 : 192
35	92%	61%	9.1	24 / 26	242 / 395	242 : 24	192 / 208	1940 / 3167	1940 : 192
40	92%	59%	8.7	24 / 26	233 / 395	233 : 24	192 / 208	1868 / 3167	1868 : 192
45	88%	56%	8.6	23 / 26	220 / 395	220 : 23	184 / 208	1763 / 3167	1763 : 184
50	85%	54%	8.8	22 / 26	215 / 395	215 : 22	176 / 208	1723 / 3167	1723 : 176
55	85%	53%	8.5	22 / 26	209 / 395	209 : 22	176 / 208	1675 / 3167	1675 : 176
60	85%	51%	8.2	22 / 26	202 / 395	202 : 22	176 / 208	1619 / 3167	1619 : 176
65	85%	50%	8.0	22 / 26	197 / 395	197 : 22	176 / 208	1579 / 3167	1579 : 176
70	85%	48%	7.6	22 / 26	190 / 395	190 : 22	176 / 208	1523 / 3167	1523 : 176
75	81%	47%	7.8	21 / 26	185 / 395	185 : 21	168 / 208	1483 / 3167	1483 : 168
80	81%	45%	7.5	21 / 26	179 / 395	179 : 21	168 / 208	1435 / 3167	1435 : 168
85	81%	44%	7.2	21 / 26	173 / 395	173 : 21	168 / 208	1387 / 3167	1387 : 168
90	81%	41%	6.7	21 / 26	162 / 395	162 : 21	168 / 208	1298 / 3167	1298 : 168
95	81%	40%	6.5	21 / 26	158 / 395	158 : 21	168 / 208	1266 / 3167	1266 : 168
100	81%	38%	6.2	21 / 26	151 / 395	151 : 21	168 / 208	1210 / 3167	1210 : 168
105	81%	37%	6.0	21 / 26	147 / 395	147 : 21	168 / 208	1178 / 3167	1178 : 168
110	81%	36%	5.8	21 / 26	142 / 395	142 : 21	168 / 208	1138 / 3167	1138 : 168
115	77%	35%	5.9	20 / 26	138 / 395	138 : 20	160 / 208	1106 / 3167	1106 : 160
120	73%	34%	6.2	19 / 26	136 / 395	136 : 19	152 / 208	1090 / 3167	1090 : 152
125	69%	33%	6.3	18 / 26	131 / 395	131 : 18	144 / 208	1050 / 3167	1050 : 144
130	69%	33%	6.3	18 / 26	131 / 395	131 : 18	144 / 208	1050 / 3167	1050 : 144
135	69%	32%	6.1	18 / 26	128 / 395	128 : 18	144 / 208	1026 / 3167	1026 : 144
140	69%	31%	5.8	18 / 26	123 / 395	123 : 18	144 / 208	986 / 3167	986 : 144
145	69%	31%	5.7	18 / 26	121 / 395	121 : 18	144 / 208	970 / 3167	970 : 144
150	69%	30%	5.6	18 / 26	119 / 395	119 : 18	144 / 208	954 / 3167	954 : 144
155	62%	29%	6.1	16 / 26	114 / 395	114 : 16	128 / 208	914 / 3167	914 : 128
160	62%	29%	6.1	16 / 26	113 / 395	113 : 16	128 / 208	906 / 3167	906 : 128
165	62%	29%	6.1	16 / 26	113 / 395	113 : 16	128 / 208	906 / 3167	906 : 128
170	62%	28%	6.0	16 / 26	112 / 395	112 : 16	128 / 208	898 / 3167	898 : 128
175	58%	28%	6.3	15 / 26	110 / 395	110 : 15	120 / 208	882 / 3167	882 : 120
180	58%	26%	5.9	15 / 26	104 / 395	104 : 15	120 / 208	834 / 3167	834 : 120
185	58%	26%	5.8	15 / 26	102 / 395	102 : 15	120 / 208	818 / 3167	818 : 120
190	50%	25%	6.6	13 / 26	99 / 395	99 : 13	104 / 208	794 / 3167	794 : 104
195	46%	25%	7.1	12 / 26	97 / 395	97 : 12	96 / 208	778 / 3167	778 : 96
200	46%	25%	7.1	12 / 26	97 / 395	97 : 12	96 / 208	778 / 3167	778 : 96

Note: The "Total Systems Estimate" is based on an anticipated total of 3,167 flowing stream systems. This is an estimate given for illustrative purposes, and the high implied precision should be ignored. These numbers are basically reached by multiplying the "Data Set Estimate" by 3,167 / 395.

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LAKE / RESERVOIR									
Ecoli Trigger	Percent			Data Set Estimate (n = 457)			Total Systems Estimate (n = 2411)		
	Sensitivity	Required to Monitor	Monitored : Caught	Sensitivity	Required to Monitor	Monitored : Caught	Sensitivity	Required to Monitor	Monitored : Caught
0	100%	100%	49.8	9 / 9	457 / 457	457 : 9	47 / 47	2411 / 2411	2411 : 47
5	89%	55%	30.4	8 / 9	251 / 457	251 : 8	42 / 47	1324 / 2411	1324 : 42
10	89%	41%	22.4	8 / 9	187 / 457	187 : 8	42 / 47	986 / 2411	986 : 42
15	89%	33%	18.0	8 / 9	152 / 457	152 : 8	42 / 47	802 / 2411	802 : 42
20	89%	29%	15.8	8 / 9	134 / 457	134 : 8	42 / 47	707 / 2411	707 : 42
25	67%	24%	17.5	6 / 9	111 / 457	111 : 6	32 / 47	586 / 2411	586 : 32
30	67%	21%	15.3	6 / 9	98 / 457	98 : 6	32 / 47	517 / 2411	517 : 32
35	67%	18%	13.0	6 / 9	84 / 457	84 : 6	32 / 47	444 / 2411	444 : 32
40	67%	17%	12.0	6 / 9	78 / 457	78 : 6	32 / 47	412 / 2411	412 : 32
45	67%	16%	11.2	6 / 9	73 / 457	73 : 6	32 / 47	385 / 2411	385 : 32
50	67%	15%	10.7	6 / 9	70 / 457	70 : 6	32 / 47	370 / 2411	370 : 32
55	67%	14%	9.7	6 / 9	64 / 457	64 : 6	32 / 47	338 / 2411	338 : 32
60	67%	14%	9.3	6 / 9	62 / 457	62 : 6	32 / 47	327 / 2411	327 : 32
65	67%	13%	8.7	6 / 9	58 / 457	58 : 6	32 / 47	306 / 2411	306 : 32
70	67%	12%	8.3	6 / 9	56 / 457	56 : 6	32 / 47	296 / 2411	296 : 32
75	67%	11%	7.7	6 / 9	52 / 457	52 : 6	32 / 47	275 / 2411	275 : 32
80	67%	11%	7.3	6 / 9	50 / 457	50 : 6	32 / 47	264 / 2411	264 : 32
85	56%	10%	8.2	5 / 9	46 / 457	46 : 5	26 / 47	242 / 2411	242 : 26
90	56%	9%	7.6	5 / 9	43 / 457	43 : 5	26 / 47	226 / 2411	226 : 26
95	56%	9%	7.2	5 / 9	41 / 457	41 : 5	26 / 47	216 / 2411	216 : 26
100	56%	9%	7.0	5 / 9	40 / 457	40 : 5	26 / 47	211 / 2411	211 : 26
105	44%	8%	8.5	4 / 9	38 / 457	38 : 4	21 / 47	200 / 2411	200 : 21
110	44%	8%	8.3	4 / 9	37 / 457	37 : 4	21 / 47	195 / 2411	195 : 21
115	44%	8%	8.3	4 / 9	37 / 457	37 : 4	21 / 47	195 / 2411	195 : 21
120	44%	8%	8.0	4 / 9	36 / 457	36 : 4	21 / 47	190 / 2411	190 : 21
125	44%	8%	7.8	4 / 9	35 / 457	35 : 4	21 / 47	185 / 2411	185 : 21
130	44%	7%	7.3	4 / 9	33 / 457	33 : 4	21 / 47	174 / 2411	174 : 21
135	44%	7%	7.0	4 / 9	32 / 457	32 : 4	21 / 47	169 / 2411	169 : 21
140	44%	7%	6.5	4 / 9	30 / 457	30 : 4	21 / 47	158 / 2411	158 : 21
145	44%	6%	6.0	4 / 9	28 / 457	28 : 4	21 / 47	148 / 2411	148 : 21
150	33%	6%	7.7	3 / 9	26 / 457	26 : 3	16 / 47	137 / 2411	137 : 16
155	33%	5%	7.3	3 / 9	25 / 457	25 : 3	16 / 47	132 / 2411	132 : 16
160	33%	5%	6.7	3 / 9	23 / 457	23 : 3	16 / 47	122 / 2411	122 : 16
165	33%	5%	6.0	3 / 9	21 / 457	21 : 3	16 / 47	111 / 2411	111 : 16
170	33%	4%	5.0	3 / 9	18 / 457	18 : 3	16 / 47	95 / 2411	95 : 16
175	33%	4%	5.0	3 / 9	18 / 457	18 : 3	16 / 47	95 / 2411	95 : 16
180	33%	4%	4.3	3 / 9	16 / 457	16 : 3	16 / 47	85 / 2411	85 : 16
185	33%	3%	3.7	3 / 9	14 / 457	14 : 3	16 / 47	74 / 2411	74 : 16
190	22%	3%	5.0	2 / 9	12 / 457	12 : 2	11 / 47	64 / 2411	64 : 11
195	22%	2%	4.5	2 / 9	11 / 457	11 : 2	11 / 47	58 / 2411	58 : 11
200	22%	2%	4.5	2 / 9	11 / 457	11 : 2	11 / 47	58 / 2411	58 : 11

Note: The "Total Systems Estimate" is based on an anticipated total of 2,411 lake/reservoir systems. This is an estimate given for illustrative purposes, and the high implied precision should be ignored. These numbers are basically reached by multiplying the "Data Set Estimate" by 2,411 / 457.