

ANALYST:		VPDES NO.	
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Parameter: Total Residual Chlorine (TRC)  
Method: DPD Colorimetric (LaMotte)  
11/2014

METHOD OF ANALYSIS:

	LaMotte 1200 Manufacturer's Instructions (Method 7916) plus an edition of <i>Standard Methods</i>
	21 <sup>st</sup> Edition of <i>Standard Methods</i> 4500-Cl G-2000 (SM21 Cl)
	22 <sup>nd</sup> Edition of <i>Standard Methods</i> 4500-Cl G-2011 (SM 22 Cl)

	Y	N
1) Is a certificate of operator competence or initial demonstration of capability available for <u>each analyst/operator</u> performing this analysis? <b>NOTE:</b> Analyze 4 samples of known TRC. Must use a lot number or source that is different from that used to prepare calibration standards. Acceptance range is 70-130% recovery <u>and</u> 20% Relative Standard Deviation (RSD) <u>or</u> within PT specified acceptance range <u>and</u> 20% RSD. [SM 1020 B.1]		
2) Is calibration curve verification checked daily using a high and a low standard? <b>NOTE:</b> May use manufacturer's installed calibration and commercially available chlorine standards for daily calibration verifications. [SM 21 1020]		
3) <b>IF</b> a replicate sample is analyzed is there a written procedure for which result will be reported on DMR (Sample or Replicate) and is this procedure being followed? [DEQ – based on EPA Good Laboratory Practices Standards]		
4) Is a Laboratory Control Sample (LCS) tested at least annually and are results within acceptance criteria? [SM 21 B 2. or SM 22 1020 B 3.] <b>NOTE:</b> LCS should be a purchased Proficiency Test (PT) sample or if a known standard different from the calibration standards is used. Use the PT acceptance criteria when given or use 70-130% recovery <u>and</u> 20% Relative Standard Deviation (RSD) as the acceptance criteria.		
5) Are only DPD <u>Instrument Grade</u> tablets or DPD Chlorine Reagent solutions used? <b>NOTE:</b> Rapid Dissolve Grade tablets cannot be used. [Mfr.]		
6) Are the LaMotte DPD reagents (tablets or liquids) stored properly and are they within manufacturer's expiration date? [LaMotte manual]		
7) Does the sample cell (i.e., colorimeter tube) used have a light path of at least 1 cm? [Mfr.]		
8) Are sample cells clean and free of scratches? [Mfr.]		
9) Is 10 mL of wastewater sample (i.e., using the 10 mL line on colorimeter tube) being used to zero the meter? [Mfr.]		
10) Is the 'index line' on the colorimeter tube aligned with the arrow on the meter? [Mfr.]		
11) Is the light shield closed when the meter is zeroed and when the sample is analyzed? [Mfr.]		
12) If using the Chlorine DPD Instrument Grade Tablets, is DPD tablet #1 crushed with a <u>small amount</u> of sample in the colorimeter tube? [Mfr.]		
13) After crushing the tablet, is the colorimeter tube filled to the 10 mL line with the sample and mixed thoroughly? [Mfr.]		
14) Is DPD Tablet #3 immediately added to the colorimeter tube? <b>NOTE:</b> DPD tablet #4 (combined reagent) is acceptable to preclude the use of DPD tablets #1 and #3. [Mfr.]		
15) If using the DPD Liquid Reagent, are 5 drops of DPD #1A followed by 5 drops of DPD #1B Total Chlorine Reagent added and mixed with 10 mL of sample in the colorimeter tube <u>prior to</u> adding 5 drops of DPD #3 Total Chlorine Reagent and mixing? [Mfr.]		

- 16) Is the sample colorimeter tube stoppered and mixed thoroughly? [Mfr.]
- 17) Is the 'index line' on the colorimeter tube aligned with the arrow on the meter and the light shield closed on the meter before reading results? [Mfr.] **NOTE:** Reagent must react at least 2 minutes when determining Total Residual Chlorine. [SM 4500-C-G]
- 18) If read-out is greater than 4.0 mg/L, is original sample diluted correctly and then reanalyzed within the holding time of the original sample? [Mfr.]


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## PROBLEMS