pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF WATER PROGRAMS

BUREAU OF CLEAN WATER

DRAFT COPPER BLM IMPLEMENTATION PROCEDURE

2025

Introduction

The United States Environmental Protection Agency (USEPA) develops National water quality criteria recommendations under section 304(a) of the Federal Clean Water Act to protect aquatic life and human health from exposures to harmful substances. In 2007, the USEPA updated its nationally recommended freshwater aquatic life copper criteria, based on the Biotic Ligand Model (BLM). The BLM reflects the latest science on metals toxicity to protect aquatic organisms, accounting for variations in metals toxicity using local water chemistry data.

The BLM requires information for 10 water quality parameters to calculate copper criteria: calcium, magnesium, pH, temperature, dissolved organic carbon (DOC), sodium, potassium, sulfate, chloride, and alkalinity. For more information on the BLM and USEPA's recommendations, visit USEPA's Copper Biotic Ligand Model webpage.

This document generally describes the Pennsylvania Department of Environmental Protection's (DEP) implementation procedure for the Commonwealth's aquatic life water quality criteria for copper, which are consistent with the USEPA's BLM-based criteria recommendations. Permits for regulated entities will be based on one of the following two approaches for determination of the appropriate copper criteria values: use of the DEP lookup tables or use of the BLM informed by site-specific data collection studies.

The DEP's analysis of the BLM and available water quality data, described in detail in the *Background and Development* section, indicates that use of DEP's statewide water quality data for certain BLM parameters combined with site-specific information for the receiving waterbody – Strahler stream order (a measure of the size of a stream), pH, and DOC – can be used to calculate BLM-based copper criteria in Pennsylvania if site-specific data are not available for all 10 water quality parameters on which the BLM is based. Alternatively, regulated entities may choose to perform data collection studies to gather the full suite of BLM parameters needed to run the model in lieu of relying on the DEP's lookup tables. In limited circumstances, a regulated facility may be required to perform water quality data collection, such as when the waterbody-specific pH or DOC values are outside the range of the DEP's lookup tables.

The DEP lookup tables provided in this implementation procedure contain BLM-based water quality criteria values that could be used to develop permit effluent limitations. These water quality criteria values are different than permit effluent limitations. Permit effluent limitations must be calculated using either site-specific or the lookup table copper criteria values and the DEP's Toxics Management Spreadsheet. A copy of the Toxics Management Spreadsheet and information on how to use it are available at the following link: Water Quality Models and Tools | Department of Environmental Protection | Commonwealth of Pennsylvania.

The USEPA develops National water quality criteria recommendations under section 304(a) of the Federal Clean Water Act (CWA) to protect aquatic life and human health from exposures to harmful substances. In 2007, the USEPA updated its nationally recommended freshwater aquatic life copper criteria. The USEPA's revised recommendations use the biotic ligand model (BLM), which is a metals bioavailability model that accounts for variations in metals based on waterbody specific water chemistry. The model requires the user to input data for ten water quality parameters that are specific to the waterbody. These updated criteria replace the USEPA's 1995 hardness-based recommendations.

Under the CWA and its implementing regulations, states must periodically, but at least once every 3 years, review and revise their water quality standards as necessary to protect their surface waters. As part of this mandatory process, states must review and consider any new or updated CWA section 304(a) criteria recommendations from USEPA that were not adopted during the state's previous review period.

Shortly after the USEPA published its 2007 copper criteria recommendations, the DEP began collecting statewide water quality data for the 10 water quality parameters required to run the BLM. The DEP collected samples at various water quality network (WQN) stations across the state to supplement the DEP's existing routine monitoring efforts. This data collection effort was necessary to understand the USEPA's BLM aquatic life criteria recommendations and to evaluate whether they were appropriate to protect aquatic life in Pennsylvania's surface waters. Furthermore, this effort would provide the data necessary to support the development of a rulemaking to amend the Commonwealth's copper criteria based on USEPA's 2007 recommendations if the DEP determined the criteria were appropriate for Pennsylvania. The data for the following 10 parameters are required to run the BLM:

1.) calcium (Ca),
2.) magnesium (Mg),
3.) pH,
4.) temperature (temp),
5.) DOC,
6.) sodium (Na),
7.) potassium (K),
8.) sulfate (SO4),
9.) chloride (Cl),
10.) alkalinity (Alk)

The DEP's BLM-related data collection efforts resulted in a robust dataset, such that the DEP was able to evaluate the available statewide water quality data and the USEPA's BLM criteria recommendations. Based on this evaluation, DEP determined that the USEPA's BLM aquatic life criteria recommendations were appropriate for the Commonwealth and were based on the most current scientific data and information.

To assist the National Pollutant Discharge Elimination System (NPDES) Permitting Division with criteria implementation, the Water Quality Division in the DEP's Bureau of Clean Water analyzed the available statewide water quality data to evaluate and understand water quality trends in Pennsylvania and to inform potential implementation of BLM-based copper criteria across the state. The DEP's BLM

lookup tables provide one approach to generating BLM-based numeric aquatic life use criteria values for use in developing permit effluent limitations. While the EPA has generally taken an ecoregion approach to establishing default water quality parameter values for metals criteria models, DEP's analysis of its 2022 Water Quality Index (WQI) dataset (Wertz and Shank, 2019)[1] did not identify a strong correlation between Pennsylvania's ecoregions and the 10 water quality parameters used in the BLM. DEP staff did, however, identify a strong correlation between total hardness (the sum of calcium and magnesium concentrations) and Strahler stream order in Pennsylvania surface waters. Although hardness is not directly used in the BLM, the concentrations of calcium and magnesium that make up total hardness are included in the model. The DEP selected data from its 2022 WQI dataset for streams with a WQI score of 60 or greater. These streams have average and better than average water quality, which ensures that the dataset primarily characterized natural background water quality of streams across Pennsylvania and did not reflect water quality in streams impacted by significant sources of pollution. In total, the selected dataset included 498,645 samples from 5,000 sites or WQI score categories. As shown in Figure 1 below, instream hardness (that is, the sum total of calcium and magnesium) increases with increasing Strahler stream order with respect to the DEP's dataset.

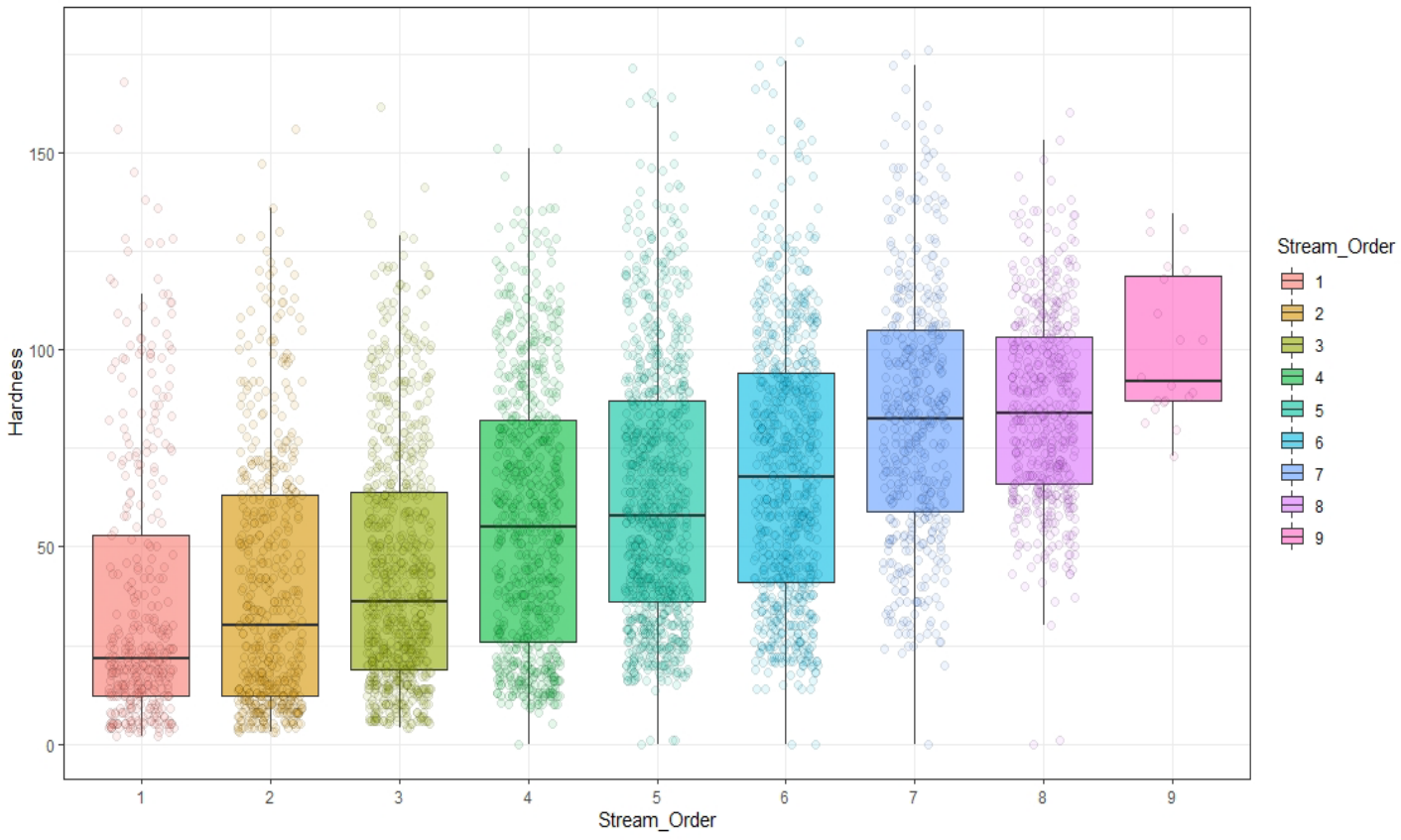

Figure 1. Strahler stream order of Pennsylvania streams categorized as average to good water quality (≥ 60 WQI score) compared to total hardness results from the WQI dataset.

[1] Wertz, T. A., and M. K. Shank. 2019. Land use from water quality: Development of a water quality index across Pennsylvania streams. Ecosphere 10(11).

Since streams with similar stream orders had similar hardness values, streams were grouped into three stream order categories: stream orders 1 to 3, stream orders 4 to 6, and stream orders 7 to 9 (Figure 2).

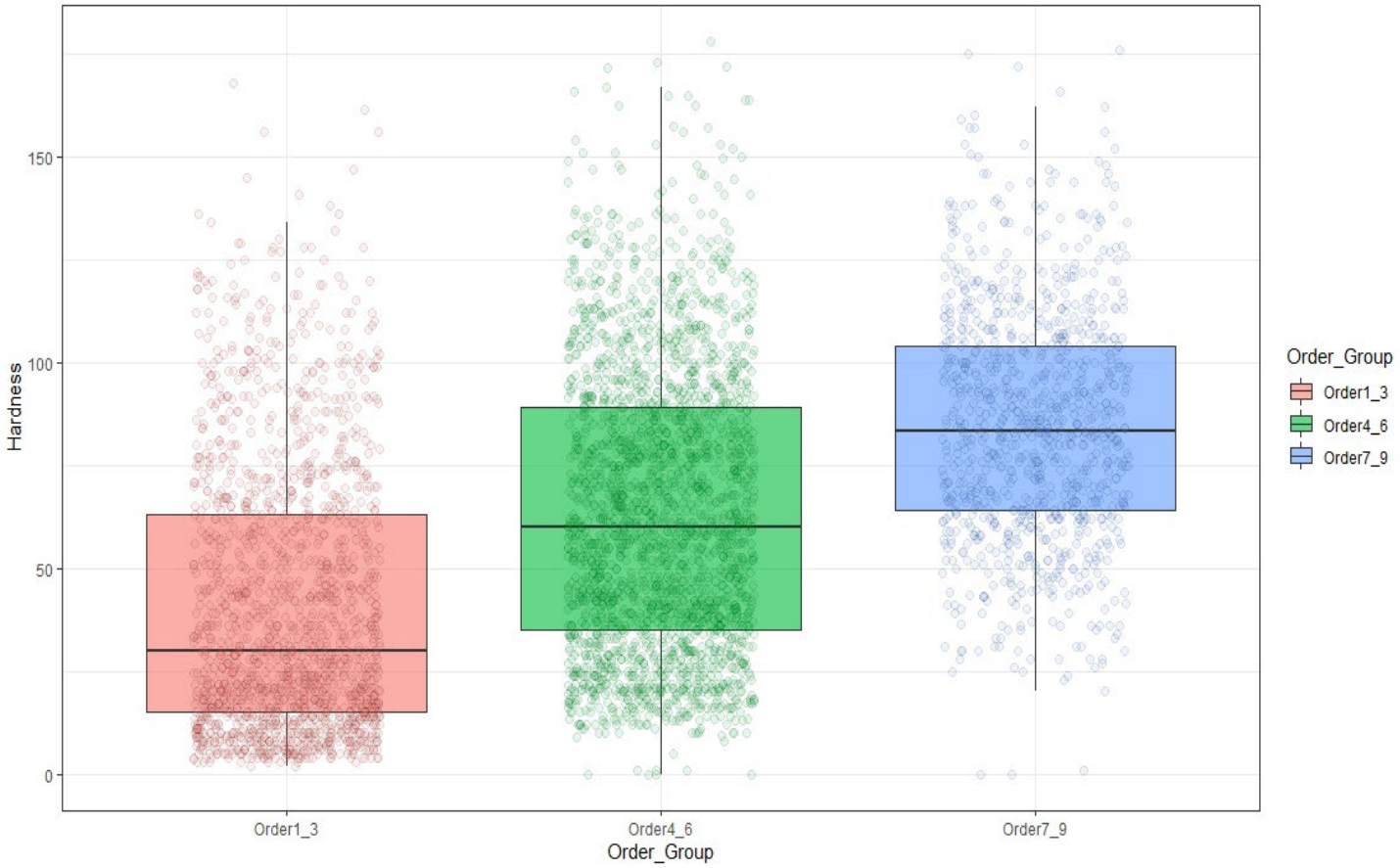

Figure 2. Strahler stream order categories of Pennsylvania average-to-good streams (≥ 60 WQI score) compared to total hardness results from the WQI dataset.

To develop the BLM lookup tables, the DEP used the WQI dataset and data from the DEP's Sample Information System (SIS) (approximately 20 years of data) to accurately represent BLM parameter concentrations in streams across Pennsylvania categorized by stream order. Prior to this analysis, the WQI and SIS datasets were merged to obtain WQI scores. WQI scores of 60 or greater were again used as a filter to characterize only average to good water quality. The median of each BLM parameter was calculated for each unique reachcode from the National Hydrography Dataset (NHD) to reduce the effect of psuedoreplication. The number of reachcodes with sufficient available data were tallied and are listed by stream order category in Table 1. Based on the data for each reachcode for which data was available, the 25th percentile of each BLM parameter was calculated by stream order group (Table 1).

Table 1. The 25th percentile of BLM parameters filtered for average to good water quality and grouped by stream order category. Temperature units are degrees Celsius (°C). pH units are standard pH units. Units for all other parameters are milligrams per liter (mg/L).

Stream Order Category	25th temp	25th pH	25th DOC	25th Ca	25th Mg	25th Na	25th K	25th SO4	25th Cl	25th Alk	Number of Reachcodes Represented
Order 1 to 3	8.50	6.47	0.90	2.34	0.90	0.75	1.00	5.14	0.87	5.15	312
Order 4 to 6	10.62	7.29	1.26	8.23	1.91	3.53	1.00	7.83	5.06	15.20	193
Order 7 to 9	12.92	7.57	2.00	18.18	4.41	9.00	1.40	11.01	12.72	41.55	61

The DEP's analysis suggests that using stream order categories may account for a significant amount of natural variability. Further analysis of the dataset and BLM outputs suggests that pH and DOC are the most influential parameters in determining the model outputs, and subsequently, the criteria for specific waterbodies in Pennsylvania. As such, the DEP did not use the 25th percentile values for pH and DOC in developing the BLM lookup tables, which is why they are grayed out in Table 1. Any person using the DEP's BLM lookup tables must have waterbody-specific data for pH and DOC to accurately use the lookup tables. The 25th percentile values for the remaining 8 BLM parameters were used to develop the DEP's BLM lookup tables. The DEP believes that using the 25th percentile values, along with other conservative approaches taken in the analysis (such as using data from streams with average and better than average water quality), will result in numeric criteria values that provide an appropriate and necessary level of protection for aquatic life in Pennsylvania waterways. Permit effluent limits based on these criteria should further ensure those protections since they are typically based on conservative design flow conditions (that is, Q7-10 flow, which is a statistical estimate of the lowest average flow that would be experienced in a waterway during a consecutive 7-day period once in 10 years).

The DEP ran the BLM multiple times using the 25th percentile values for Ca, Mg, K, Na, SO4, Temp, Cl, and Alk along with pH values ranging from 6.0 to 9.0 and DOC values ranging from 1 milligram per liter (mg/L) to 6.5 mg/L. This pH range corresponds to the pH criteria in 25 Pa. Code § 93.7, Table 3. The DOC range represents the range of values most frequently encountered in Pennsylvania surface waters. If a pH or DOC instream concentration falls outside of these ranges, the lookup tables cannot be used, and regulated entities will need to work with the DEP to determine the best path forward and conduct further analyses.

To use the BLM lookup tables, a person must know the Strahler stream order for the waterbody of interest and have waterbody-specific pH and DOC information.

- *Strahler Stream Order* – Information on Strahler stream order for Pennsylvania surface waters is available in the DEP's eMapPA, which is located on the DEP's web site at http://www.pa.gov/agencies/dep (select "Data and Tools", then "GIS" and then scroll to find "eMapPA"). In eMapPA, zoom in to the area of interest on the map. Then expand the layers under the "Regulated Facilities and Related Information" by clicking on the + beside the checkbox. Next, expand the layers under "Streams and Water Resources" followed by "Surface Water Related". Under the "Surface Water Related" layer, select the "PA Historic Streams" layer by checking the box. If the checkbox is not selectable, you may need to zoom further into the area of interest. At the top of the map, select the information button, which is a black circle with a white, lowercase i in the middle (ℹ), and then left click on the stream of interest. The Strahler stream order information can be found at the bottom of the information box. See Figure 3 below.

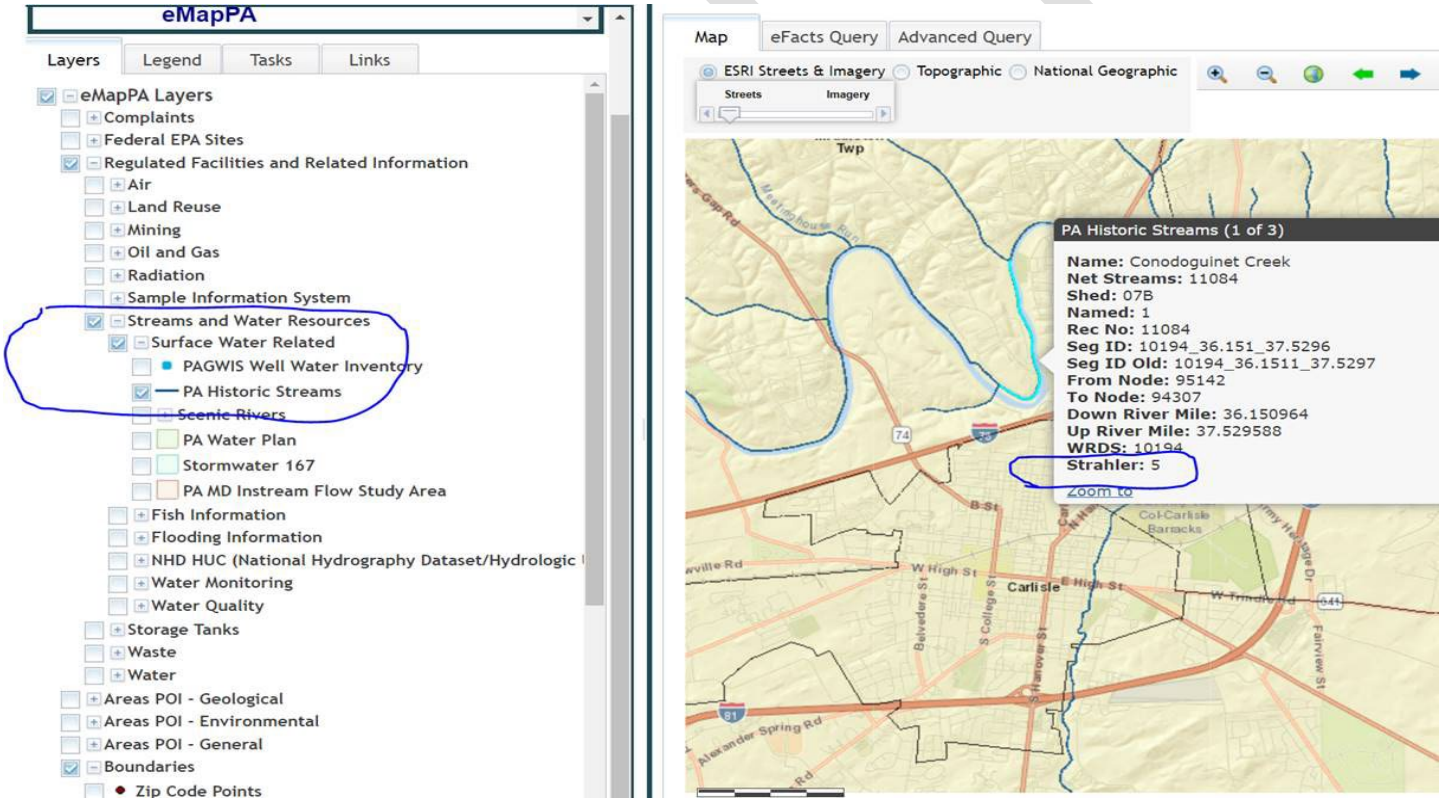

Figure 3. Screen shot of eMapPA showing the location of the PA Historic Streams layer and Strahler stream order information in the information box.

- *pH and DOC* - In addition to stream order, waterbody-specific pH and dissolved organic carbon (DOC) information is needed to use the DEP's BLM lookup tables. The pH and DOC values used in the model should capture the temporal and spatial variability of these parameters in the

waterbody and both values must be specified to the tenths decimal place (i.e., pH = 5.2 versus pH = 5.)

The first step in using the tables is to locate the correct table based on Strahler stream order. There are three lookup tables that correspond to specific stream order groupings. Tables are as follows:

- Table A for streams with a Strahler stream order of 1, 2, or 3.
- Table B for streams with a Strahler stream order of 4, 5, or 6.
- Table C for streams with a Strahler stream order of 7, 8, or 9.

After identifying the correct table based on the Strahler stream order of the receiving waterbody, a person will need to locate the stream's pH and DOC values on the table. The pH values used to run the BLM for the lookup table are located along the left side of the table, and the DOC values are located along the top of the table. After locating the waterbody-specific pH and DOC values along the X and Y axis of the table, a person must follow the pH (row) and DOC (column) to their point of intersection to obtain the waterbody-specific Criteria Maximum Concentration (CMC) and Criteria Continuous Concentration (CCC) values. The CMC protects aquatic organisms from acute, or short-term exposures, to copper while the CCC protects aquatic organisms from chronic, or long-term exposures, to copper. The units for all CMC and CCC values in each of the 3 lookup tables are micrograms per liter (µg/L). An example of how to navigate the lookup tables is provided in Figure 2 below.

> *Example*: For a stream with Strahler stream order of 2, an average pH of 7.0, and an average DOC of 1.5, Table A applies since the stream is stream order 1 to 3, and the CMC is 2.83 and the CCC is 1.75 (Figure 2).

TABLE A - Stream Order 1 to 3.

pH	CMC (µg/L) / CCC (µg/L)	DOC (mg/L)						
		1	1.1	1.2	1.3	1.4	1.5	1.6
6.0	CMC	0.19	0.21	0.23	0.25	0.27	0.29	0.31
	CCC	0.12	0.13	0.14	0.16	0.17	0.18	0.19
6.1	CMC	0.25	0.28	0.31	0.33	0.36	0.38	0.41
	CCC	0.16	0.17	0.19	0.21	0.22	0.24	0.25
6.2	CMC	0.33	0.37	0.40	0.43	0.47	0.50	0.54
	CCC	0.21	0.23	0.25	0.27	0.29	0.31	0.33
6.3	CMC	0.43	0.48	0.52	0.57	0.61	0.66	0.70
	CCC	0.27	0.30	0.32	0.35	0.38	0.41	0.44
6.4	CMC	0.56	0.61	0.67	0.73	0.79	0.85	0.90
	CCC	0.35	0.38	0.42	0.45	0.49	0.53	0.56
6.5	CMC	0.71	0.78	0.85	0.93	1.00	1.07	1.15
	CCC	0.44	0.48	0.53	0.58	0.62	0.67	0.71
6.6	CMC	0.89	0.98	1.07	1.16	1.25	1.34	1.44
	CCC	0.55	0.61	0.66	0.72	0.78	0.83	0.89
6.7	CMC	1.09	1.20	1.31	1.43	1.54	1.65	1.77
	CCC	0.68	0.75	0.82	0.89	0.96	1.03	1.10
6.8	CMC	1.32	1.46	1.59	1.73	1.87	2.00	2.14
	CCC	0.82	0.90	0.99	1.07	1.16	1.24	1.33
6.9	CMC	1.58	1.74	1.90	2.07	2.23	2.39	2.56
	CCC	0.98	1.08	1.18	1.28	1.38	1.49	1.59
7.0	CMC	1.86	2.06	2.25	2.44	2.63	**2.83**	3.02
	CCC	1.16	1.28	1.40	1.51	1.63	**1.75**	1.88
7.1	CMC	2.18	2.40	2.63	2.85	3.08	3.30	3.53
	CCC	1.35	1.49	1.63	1.77	1.91	2.05	2.19

Figure 2. Example of using DEP's BLM lookup table for a stream with Strahler stream order of 2, an average pH of 7.0, and an average DOC of 1.5.

TABLE A - Stream Order 1 to 3.

pH	CMC (µg/L)	DOC (mg/L)																											
	CCC (µg/L)	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7
6.0	CMC	0.19	0.21	0.23	0.25	0.27	0.29	0.31	0.33	0.35	0.37	0.39	0.41	0.43	0.45	0.48	0.50	0.52	0.54	0.56	0.58	0.60	0.62	0.65	0.67	0.69	0.71	0.73	0.75
	CCC	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.21	0.22	0.23	0.24	0.26	0.27	0.28	0.30	0.31	0.32	0.33	0.35	0.36	0.37	0.39	0.40	0.41	0.43	0.44	0.45	0.47
6.1	CMC	0.25	0.28	0.31	0.33	0.36	0.38	0.41	0.44	0.46	0.49	0.52	0.54	0.57	0.60	0.63	0.65	0.68	0.71	0.74	0.77	0.79	0.82	0.85	0.88	0.91	0.94	0.97	0.99
	CCC	0.16	0.17	0.19	0.21	0.22	0.24	0.25	0.27	0.29	0.30	0.32	0.34	0.36	0.37	0.39	0.41	0.42	0.44	0.46	0.48	0.49	0.51	0.53	0.55	0.56	0.58	0.60	0.62
6.2	CMC	0.33	0.37	0.40	0.43	0.47	0.50	0.54	0.57	0.61	0.64	0.68	0.72	0.75	0.79	0.82	0.86	0.90	0.93	0.97	1.01	1.04	1.08	1.12	1.16	1.19	1.23	1.27	1.31
	CCC	0.21	0.23	0.25	0.27	0.29	0.31	0.33	0.36	0.38	0.40	0.42	0.44	0.47	0.49	0.51	0.53	0.56	0.58	0.60	0.62	0.65	0.67	0.69	0.72	0.74	0.76	0.79	0.81
6.3	CMC	0.43	0.48	0.52	0.57	0.61	0.66	0.70	0.75	0.79	0.84	0.89	0.93	0.98	1.03	1.07	1.12	1.17	1.21	1.26	1.31	1.36	1.41	1.46	1.51	1.55	1.60	1.65	1.70
	CCC	0.27	0.30	0.32	0.35	0.38	0.41	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.64	0.67	0.70	0.72	0.75	0.78	0.81	0.84	0.87	0.90	0.93	0.97	1.00	1.03	1.06
6.4	CMC	0.56	0.61	0.67	0.73	0.79	0.85	0.90	0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.57	1.63	1.69	1.75	1.81	1.88	1.94	2.00	2.07	2.13	2.19
	CCC	0.35	0.38	0.42	0.45	0.49	0.53	0.56	0.60	0.63	0.67	0.71	0.75	0.78	0.82	0.86	0.90	0.93	0.97	1.01	1.05	1.09	1.13	1.17	1.20	1.24	1.28	1.32	1.36
6.5	CMC	0.71	0.78	0.85	0.93	1.00	1.07	1.15	1.22	1.30	1.37	1.45	1.52	1.60	1.68	1.75	1.83	1.91	1.99	2.07	2.14	2.22	2.30	2.38	2.46	2.54	2.62	2.70	2.78
	CCC	0.44	0.48	0.53	0.58	0.62	0.67	0.71	0.76	0.81	0.85	0.90	0.95	0.99	1.04	1.09	1.14	1.19	1.23	1.28	1.33	1.38	1.43	1.48	1.53	1.58	1.63	1.68	1.73
6.6	CMC	0.89	0.98	1.07	1.16	1.25	1.34	1.44	1.53	1.62	1.72	1.81	1.91	2.00	2.10	2.19	2.29	2.39	2.48	2.58	2.68	2.78	2.88	2.98	3.08	3.18	3.28	3.38	3.48
	CCC	0.55	0.61	0.66	0.72	0.78	0.83	0.89	0.95	1.01	1.07	1.12	1.18	1.24	1.30	1.36	1.42	1.48	1.54	1.60	1.66	1.73	1.79	1.85	1.91	1.97	2.03	2.10	2.16
6.7	CMC	1.09	1.20	1.31	1.43	1.54	1.65	1.77	1.88	2.00	2.11	2.23	2.34	2.46	2.58	2.70	2.82	2.94	3.06	3.17	3.29	3.41	3.54	3.66	3.78	3.91	4.03	4.15	4.28
	CCC	0.68	0.75	0.82	0.89	0.96	1.03	1.10	1.17	1.24	1.31	1.38	1.46	1.53	1.60	1.67	1.75	1.82	1.90	1.97	2.05	2.12	2.20	2.27	2.35	2.43	2.50	2.58	2.66
6.8	CMC	1.32	1.46	1.59	1.73	1.87	2.00	2.14	2.28	2.42	2.56	2.70	2.84	2.98	3.12	3.27	3.41	3.56	3.70	3.84	3.99	4.14	4.28	4.43	4.58	4.73	4.88	5.02	5.17
	CCC	0.82	0.90	0.99	1.07	1.16	1.24	1.33	1.42	1.50	1.59	1.68	1.76	1.85	1.94	2.03	2.12	2.21	2.30	2.39	2.48	2.57	2.66	2.75	2.84	2.94	3.03	3.12	3.21
6.9	CMC	1.58	1.74	1.90	2.07	2.23	2.39	2.56	2.72	2.89	3.06	3.22	3.39	3.56	3.73	3.90	4.07	4.24	4.42	4.59	4.76	4.94	5.11	5.29	5.46	5.64	5.82	6.00	6.17
	CCC	0.98	1.08	1.18	1.28	1.38	1.49	1.59	1.69	1.80	1.90	2.00	2.11	2.21	2.32	2.42	2.53	2.64	2.74	2.85	2.96	3.07	3.18	3.28	3.39	3.50	3.61	3.72	3.84
7.0	CMC	1.86	2.06	2.25	2.44	2.63	2.83	3.02	3.22	3.41	3.61	3.81	4.00	4.20	4.40	4.60	4.81	5.01	5.21	5.41	5.62	5.82	6.03	6.24	6.44	6.65	6.86	7.07	7.28
	CCC	1.16	1.28	1.40	1.51	1.63	1.75	1.88	2.00	2.12	2.24	2.36	2.49	2.61	2.73	2.86	2.98	3.11	3.24	3.36	3.49	3.62	3.74	3.87	4.00	4.13	4.26	4.39	4.52
7.1	CMC	2.18	2.40	2.63	2.85	3.08	3.30	3.53	3.76	3.99	4.22	4.45	4.68	4.91	5.14	5.38	5.61	5.85	6.09	6.32	6.56	6.80	7.04	7.28	7.52	7.77	8.01	8.25	8.50
	CCC	1.35	1.49	1.63	1.77	1.91	2.05	2.19	2.33	2.48	2.62	2.76	2.91	3.05	3.20	3.34	3.49	3.63	3.78	3.93	4.08	4.22	4.37	4.52	4.67	4.82	4.98	5.13	5.28
7.2	CMC	2.53	2.79	3.04	3.30	3.57	3.83	4.09	4.36	4.62	4.89	5.15	5.42	5.69	5.96	6.23	6.50	6.78	7.05	7.33	7.60	7.88	8.16	8.43	8.71	8.99	9.28	9.56	9.84
	CCC	1.57	1.73	1.89	2.05	2.21	2.38	2.54	2.71	2.87	3.04	3.20	3.37	3.53	3.70	3.87	4.04	4.21	4.38	4.55	4.72	4.89	5.07	5.24	5.41	5.59	5.76	5.94	6.11
7.3	CMC	2.91	3.21	3.50	3.80	4.10	4.41	4.71	5.01	5.32	5.62	5.93	6.24	6.55	6.86	7.17	7.48	7.80	8.11	8.43	8.74	9.06	9.38	9.70	10.02	10.34	10.67	10.99	11.32
	CCC	1.81	1.99	2.18	2.36	2.55	2.74	2.92	3.11	3.30	3.49	3.68	3.88	4.07	4.26	4.45	4.65	4.84	5.04	5.23	5.43	5.63	5.83	6.03	6.23	6.43	6.63	6.83	7.03
7.4	CMC	3.33	3.67	4.01	4.35	4.70	5.04	5.39	5.73	6.08	6.43	6.78	7.14	7.49	7.84	8.20	8.56	8.92	9.28	9.64	10.00	10.36	10.73	11.09	11.46	11.83	12.20	12.57	12.94
	CCC	2.07	2.28	2.49	2.70	2.92	3.13	3.35	3.56	3.78	4.00	4.21	4.43	4.65	4.87	5.09	5.32	5.54	5.76	5.99	6.21	6.44	6.66	6.89	7.12	7.35	7.57	7.80	8.04
7.5	CMC	3.79	4.17	4.56	4.95	5.34	5.73	6.13	6.52	6.92	7.32	7.71	8.11	8.52	8.92	9.32	9.73	10.14	10.54	10.95	11.37	11.78	12.19	12.61	13.02	13.44	13.86	14.28	14.70
	CCC	2.35	2.59	2.83	3.08	3.32	3.56	3.81	4.05	4.30	4.54	4.79	5.04	5.29	5.54	5.79	6.04	6.30	6.55	6.80	7.06	7.32	7.57	7.83	8.09	8.35	8.61	8.87	9.13
7.6	CMC	4.28	4.72	5.16	5.60	6.04	6.48	6.93	7.37	7.82	8.27	8.72	9.17	9.63	10.08	10.54	11.00	11.46	11.92	12.38	12.85	13.31	13.78	14.25	14.72	15.19	15.67	16.14	16.62
	CCC	2.66	2.93	3.20	3.48	3.75	4.03	4.30	4.58	4.86	5.14	5.42	5.70	5.98	6.26	6.55	6.83	7.12	7.40	7.69	7.98	8.27	8.56	8.85	9.14	9.44	9.73	10.02	10.32
7.7	CMC	4.82	5.31	5.80	6.30	6.79	7.29	7.79	8.29	8.79	9.30	9.80	10.31	10.82	11.33	11.85	12.36	12.88	13.39	13.91	14.44	14.96	15.48	16.01	16.54	17.07	17.60	18.13	18.67
	CCC	2.99	3.30	3.60	3.91	4.22	4.53	4.84	5.15	5.46	5.77	6.09	6.40	6.72	7.04	7.36	7.68	8.00	8.32	8.64	8.97	9.29	9.62	9.94	10.27	10.60	10.93	11.26	11.59
7.8	CMC	5.38	5.93	6.48	7.03	7.59	8.14	8.70	9.26	9.82	10.38	10.95	11.52	12.08	12.66	13.23	13.80	14.38	14.96	15.54	16.12	16.70	17.29	17.87	18.46	19.05	19.64	20.24	20.83
	CCC	3.34	3.68	4.03	4.37	4.71	5.06	5.40	5.75	6.10	6.45	6.80	7.15	7.51	7.86	8.22	8.57	8.93	9.29	9.65	10.01	10.37	10.74	11.10	11.47	11.83	12.20	12.57	12.94
7.9	CMC	5.97	6.58	7.19	7.80	8.42	9.03	9.65	10.27	10.89	11.52	12.14	12.77	13.40	14.04	14.67	15.31	15.94	16.58	17.23	17.87	18.52	19.17	19.82	20.47	21.12	21.78	22.44	23.10
	CCC	3.71	4.09	4.47	4.85	5.23	5.61	5.99	6.38	6.77	7.15	7.54	7.93	8.33	8.72	9.11	9.51	9.90	10.30	10.70	11.10	11.50	11.90	12.31	12.71	13.12	13.53	13.94	14.35
8.0	CMC	6.58	7.25	7.92	8.59	9.27	9.95	10.63	11.31	11.99	12.68	13.37	14.06	14.75	15.45	16.14	16.84	17.54	18.25	18.95	19.66	20.38	21.09	21.81	22.53	23.25	23.97	24.69	25.41
	CCC	4.08	4.50	4.92	5.34	5.76	6.18	6.60	7.02	7.45	7.88	8.30	8.73	9.16	9.59	10.03	10.46	10.90	11.33	11.77	12.21	12.66	13.10	13.55	13.99	14.44	14.89	15.34	15.79
8.1	CMC	7.19	7.92	8.66	9.39	10.13	10.87	11.62	12.36	13.11	13.86	14.61	15.37	16.12	16.88	17.65	18.41	19.17	19.94	20.71	21.49	22.26	23.04	23.82	24.60	25.39	26.17	26.96	27.75
	CCC	4.47	4.92	5.38	5.83	6.29	6.75	7.22	7.68	8.14	8.61	9.08	9.54	10.02	10.49	10.96	11.43	11.91	12.39	12.87	13.35	13.83	14.31	14.79	15.28	15.77	16.26	16.75	17.24
8.2	CMC	7.80	8.59	9.39	10.19	10.99	11.79	12.60	13.41	14.22	15.03	15.84	16.66	17.48	18.30	19.13	19.96	20.79	21.62	22.45	23.29	24.13	24.97	25.81	26.66	27.51	28.36	29.21	30.07
	CCC	4.85	5.34	5.83	6.33	6.83	7.32	7.82	8.33	8.83	9.33	9.84	10.35	10.86	11.37	11.88	12.40	12.91	13.43	13.95	14.47	14.99	15.51	16.03	16.56	17.09	17.62	18.15	18.68
8.3	CMC	8.40	9.25	10.11	10.97	11.83	12.69	13.56	14.43	15.30	16.17	17.05	17.93	18.81	19.69	20.58	21.47	22.36	23.25	24.15	25.05	25.95	26.86	27.76	28.67	29.58	30.50	31.41	32.33
	CCC	5.22	5.75	6.28	6.81	7.35	7.88	8.42	8.96	9.50	10.04	10.59	11.13	11.68	12.23	12.78	13.33	13.89	14.44	15.00	15.56	16.12	16.68	17.24	17.81	18.37	18.94	19.51	20.08
8.4	CMC	8.97	9.88	10.80	11.72	12.64	13.56	14.48	15.41	16.34	17.27	18.21	19.15	20.09	21.03	21.98	22.92	23.88	24.83	25.79	26.74	27.71	28.67	29.64	30.61	31.58	32.55	33.53	34.51
	CCC	5.57	6.14	6.71	7.28	7.85	8.42	8.99	9.57	10.15	10.73	11.31	11.89	12.48	13.06	13.65	14.24	14.83	15.42	16.02	16.61	17.21	17.81	18.41	19.01	19.61	20.22	20.83	21.44
8.5	CMC	9.52	10.49	11.46	12.43	13.41	14.38	15.36	16.35	17.33	18.32	19.31	20.31	21.30	22.30	23.31	24.31	25.32	26.33	27.34	28.36	29.38	30.40	31.42	32.45	33.48	34.51	35.55	36.59
	CCC	5.91	6.51	7.12	7.72	8.33	8.93	9.54	10.15	10.77	11.38	12.00	12.61	13.23	13.85	14.48	15.10	15.73	16.35	16.98	17.61	18.25	18.88	19.52	20.16	20.80	21.44	22.08	22.72
8.6	CMC	10.04	11.06	12.08	13.11	14.13	15.16	16.20	17.23	18.27	19.31	20.36	21.41	22.46	23.51	24.56	25.62	26.68	27.75	28.82	29.88	30.96	32.03	33.11	34.19	35.28	36.36	37.45	38.54
	CCC	6.24	6.87	7.50	8.14	8.78	9.42	10.06	10.70	11.35	12.00	12.64	13.30	13.95	14.60	15.26	15.91	16.57	17.23	17.90	18.56	19.23	19.90	20.57	21.24	21.91	22.59	23.26	23.94
8.7	CMC	10.53	11.60	12.67	13.74	14.82	15.90	16.98	18.07	19.16	20.25	21.34	22.44	23.54	24.64	25.75	26.86	27.97	29.08	30.20	31.32	32.44	33.57	34.70	35.83	36.97	38.10	39.24	40.39
	CCC	6.54	7.20	7.87	8.54	9.21	9.88	10.55	11.22	11.90	12.58	13.26	13.94	14.62	15.31	15.99	16.68	17.37	18.06	18.76	19.45	20.15	20.85	21.55	22.26	22.96	23.67	24.38	25.09
8.8	CMC	10.99	12.11	13.22	14.34	15.47	16.59	17.72	18.86	19.99	21.13	22.27	23.41	24.56	25.71	26.86	28.02	29.18	30.34	31.51	32.67	33.85	35.02	36.20	37.38	38.56	39.74	40.93	42.12
	CCC	6.83	7.52	8.21	8.91	9.61	10.31	11.01	11.71	12.42	13.12	13.83	14.54	15.26	15.97	16.69	17.40	18.12	18.85	19.57	20.29	21.02	21.75	22.48	23.21	23.95	24.69	25.42	26.16
8.9	CMC	11.43	12.59	13.75	14.91	16.08	17.25	18.43	19.60	20.78	21.96	23.15	24.34	25.53	26.73	27.92	29.12	30.33	31.54	32.75	33.96	35.17	36.39	37.62	38.84	40.07	41.30	42.53	43.77
	CCC	7.10	7.82	8.54	9.26	9.99	10.72	11.44	12.18	12.91	13.64	14.38	15.12	15.86	16.60	17.34	18.09	18.84	19.59	20.34	21.09	21.85	22.60	23.36	24.12	24.89	25.65	26.42	27.19
9.0	CMC	11.85	13.04	14.25	15.46	16.67	17.88	19.10	20.32	21.54	22.76	23.99	25.22	26.46	27.70	28.94	30.18	31.43	32.68	33.93	35.19	36.45	37.71	38.98	40.24	41.52	42.79	44.07	45.35
	CCC	7.36	8.10	8.85	9.60	10.35	11.11	11.86	12.62	13.38	14.14	14.90	15.67	16.43	17.20	17.97	18.75	19.52	20.30	21.08	21.86	22.64	23.42	24.21	25.00	25.79	26.58	27.37	28.17

pH	CMC (µg/L)	DOC (mg/L)																											
	CCC (µg/L)	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5
6.0	CMC	0.78	0.80	0.82	0.84	0.87	0.89	0.91	0.93	0.96	0.98	1.00	1.02	1.05	1.07	1.09	1.12	1.14	1.16	1.19	1.21	1.24	1.26	1.28	1.31	1.33	1.36	1.38	1.40
	CCC	0.48	0.50	0.51	0.52	0.54	0.55	0.57	0.58	0.59	0.61	0.62	0.64	0.65	0.67	0.68	0.69	0.71	0.72	0.74	0.75	0.77	0.78	0.80	0.81	0.83	0.84	0.86	0.87
6.1	CMC	1.02	1.05	1.08	1.11	1.14	1.17	1.20	1.23	1.26	1.29	1.32	1.35	1.38	1.41	1.44	1.47	1.51	1.54	1.57	1.60	1.63	1.66	1.69	1.72	1.76	1.79	1.82	1.85
	CCC	0.64	0.65	0.67	0.69	0.71	0.73	0.75	0.76	0.78	0.80	0.82	0.84	0.86	0.88	0.90	0.92	0.93	0.95	0.97	0.99	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15
6.2	CMC	1.35	1.38	1.42	1.46	1.50	1.54	1.58	1.62	1.66	1.70	1.74	1.78	1.82	1.86	1.90	1.94	1.98	2.02	2.06	2.10	2.14	2.18	2.22	2.27	2.31	2.35	2.39	2.43
	CCC	0.84	0.86	0.88	0.91	0.93	0.96	0.98	1.00	1.03	1.05	1.08	1.10	1.13	1.15	1.18	1.20	1.23	1.25	1.28	1.30	1.33	1.36	1.38	1.41	1.43	1.46	1.49	1.51
6.3	CMC	1.75	1.80	1.85	1.90	1.95	2.00	2.06	2.11	2.16	2.21	2.26	2.31	2.37	2.42	2.47	2.52	2.58	2.63	2.68	2.74	2.79	2.84	2.90	2.95	3.01	3.06	3.12	3.17
	CCC	1.09	1.12	1.15	1.18	1.21	1.25	1.28	1.31	1.34	1.37	1.40	1.44	1.47	1.50	1.53	1.57	1.60	1.63	1.67	1.70	1.73	1.77	1.80	1.83	1.87	1.90	1.94	1.97
6.4	CMC	2.26	2.32	2.39	2.45	2.52	2.58	2.65	2.71	2.78	2.85	2.91	2.98	3.05	3.11	3.18	3.25	3.32	3.39	3.45	3.52	3.59	3.66	3.73	3.80	3.87	3.94	4.01	4.08
	CCC	1.40	1.44	1.48	1.52	1.56	1.60	1.64	1.69	1.73	1.77	1.81	1.85	1.89	1.93	1.98	2.02	2.06	2.10	2.15	2.19	2.23	2.27	2.32	2.36	2.40	2.45	2.49	2.54
6.5	CMC	2.87	2.95	3.03	3.11	3.19	3.28	3.36	3.44	3.53	3.61	3.70	3.78	3.87	3.95	4.04	4.12	4.21	4.30	4.38	4.47	4.56	4.64	4.73	4.82	4.91	5.00	5.09	5.18
	CCC	1.78	1.83	1.88	1.93	1.98	2.04	2.09	2.14	2.19	2.24	2.30	2.35	2.40	2.45	2.51	2.56	2.61	2.67	2.72	2.78	2.83	2.89	2.94	2.99	3.05	3.11	3.16	3.22
6.6	CMC	3.58	3.68	3.78	3.89	3.99	4.09	4.20	4.30	4.40	4.51	4.61	4.72	4.83	4.93	5.04	5.15	5.25	5.36	5.47	5.58	5.69	5.80	5.91	6.02	6.13	6.24	6.35	6.46
	CCC	2.22	2.29	2.35	2.41	2.48	2.54	2.61	2.67	2.74	2.80	2.87	2.93	3.00	3.06	3.13	3.20	3.26	3.33	3.40	3.47	3.53	3.60	3.67	3.74	3.81	3.88	3.95	4.01
6.7	CMC	4.40	4.53	4.65	4.78	4.90	5.03	5.16	5.29	5.41	5.54	5.67	5.80	5.93	6.06	6.19	6.33	6.46	6.59	6.72	6.86	6.99	7.12	7.26	7.39	7.53	7.67	7.80	7.94
	CCC	2.73	2.81	2.89	2.97	3.05	3.12	3.20	3.28	3.36	3.44	3.52	3.60	3.68	3.77	3.85	3.93	4.01	4.09	4.18	4.26	4.34	4.43	4.51	4.59	4.68	4.76	4.85	4.93
6.8	CMC	5.33	5.48	5.63	5.78	5.93	6.09	6.24	6.39	6.55	6.70	6.86	7.02	7.17	7.33	7.49	7.65	7.81	7.97	8.13	8.29	8.45	8.61	8.78	8.94	9.10	9.27	9.43	9.60
	CCC	3.31	3.40	3.50	3.59	3.68	3.78	3.88	3.97	4.07	4.16	4.26	4.36	4.46	4.55	4.65	4.75	4.85	4.95	5.05	5.15	5.25	5.35	5.45	5.55	5.65	5.76	5.86	5.96
6.9	CMC	6.35	6.53	6.71	6.90	7.08	7.26	7.44	7.63	7.81	8.00	8.18	8.37	8.55	8.74	8.93	9.12	9.31	9.50	9.69	9.88	10.07	10.27	10.46	10.65	10.85	11.04	11.24	11.44
	CCC	3.95	4.06	4.17	4.28	4.40	4.51	4.62	4.74	4.85	4.97	5.08	5.20	5.31	5.43	5.55	5.66	5.78	5.90	6.02	6.14	6.26	6.38	6.50	6.62	6.74	6.86	6.98	7.10
7.0	CMC	7.49	7.70	7.91	8.13	8.34	8.56	8.77	8.99	9.20	9.42	9.64	9.86	10.08	10.30	10.52	10.74	10.97	11.19	11.41	11.64	11.86	12.09	12.32	12.55	12.78	13.01	13.24	13.47
	CCC	4.65	4.78	4.92	5.05	5.18	5.31	5.45	5.58	5.72	5.85	5.99	6.12	6.26	6.40	6.53	6.67	6.81	6.95	7.09	7.23	7.37	7.51	7.65	7.79	7.94	8.08	8.22	8.37
7.1	CMC	8.75	8.99	9.24	9.49	9.74	9.99	10.24	10.49	10.74	11.00	11.25	11.51	11.76	12.02	12.28	12.54	12.80	13.06	13.32	13.58	13.84	14.11	14.37	14.64	14.90	15.17	15.44	15.71
	CCC	5.43	5.59	5.74	5.89	6.05	6.20	6.36	6.52	6.67	6.83	6.99	7.15	7.31	7.47	7.63	7.79	7.95	8.11	8.27	8.43	8.60	8.76	8.93	9.09	9.26	9.42	9.59	9.76
7.2	CMC	10.13	10.41	10.70	10.99	11.27	11.56	11.85	12.14	12.44	12.73	13.02	13.32	13.61	13.91	14.21	14.51	14.81	15.11	15.41	15.71	16.02	16.32	16.63	16.93	17.24	17.55	17.86	18.17
	CCC	6.29	6.47	6.64	6.82	7.00	7.18	7.36	7.54	7.72	7.91	8.09	8.27	8.46	8.64	8.82	9.01	9.20	9.38	9.57	9.76	9.95	10.14	10.33	10.52	10.71	10.90	11.09	11.29
7.3	CMC	11.64	11.97	12.30	12.63	12.96	13.29	13.63	13.96	14.30	14.63	14.97	15.31	15.65	15.99	16.33	16.67	17.02	17.36	17.71	18.06	18.41	18.76	19.11	19.46	19.81	20.17	20.52	20.88
	CCC	7.23	7.44	7.64	7.85	8.05	8.26	8.46	8.67	8.88	9.09	9.30	9.51	9.72	9.93	10.14	10.36	10.57	10.78	11.00	11.22	11.43	11.65	11.87	12.09	12.31	12.53	12.75	12.97
7.4	CMC	13.31	13.68	14.06	14.44	14.81	15.19	15.57	15.95	16.34	16.72	17.11	17.49	17.88	18.27	18.66	19.05	19.44	19.84	20.23	20.63	21.03	21.42	21.82	22.23	22.63	23.03	23.44	23.85
	CCC	8.27	8.50	8.73	8.97	9.20	9.44	9.67	9.91	10.15	10.39	10.62	10.86	11.11	11.35	11.59	11.83	12.08	12.32	12.57	12.81	13.06	13.31	13.56	13.80	14.06	14.31	14.56	14.81
7.5	CMC	15.13	15.55	15.98	16.41	16.83	17.26	17.70	18.13	18.56	19.00	19.43	19.87	20.31	20.75	21.20	21.64	22.09	22.53	22.98	23.43	23.88	24.33	24.79	25.24	25.70	26.16	26.62	27.08
	CCC	9.40	9.66	9.92	10.19	10.46	10.72	10.99	11.26	11.53	11.80	12.07	12.34	12.62	12.89	13.17	13.44	13.72	14.00	14.27	14.55	14.83	15.11	15.40	15.68	15.96	16.25	16.53	16.82
7.6	CMC	17.09	17.57	18.05	18.54	19.02	19.51	19.99	20.48	20.97	21.46	21.96	22.45	22.95	23.44	23.94	24.45	24.95	25.45	25.96	26.46	26.97	27.48	28.00	28.51	29.02	29.54	30.06	30.58
	CCC	10.62	10.92	11.21	11.51	11.81	12.12	12.42	12.72	13.03	13.33	13.64	13.94	14.25	14.56	14.87	15.18	15.50	15.81	16.12	16.44	16.75	17.07	17.39	17.71	18.03	18.35	18.67	18.99
7.7	CMC	19.20	19.74	20.28	20.82	21.36	21.91	22.45	23.00	23.55	24.10	24.66	25.21	25.77	26.33	26.89	27.45	28.01	28.58	29.14	29.71	30.28	30.86	31.43	32.00	32.58	33.16	33.74	34.33
	CCC	11.93	12.26	12.60	12.93	13.27	13.61	13.95	14.29	14.63	14.97	15.31	15.66	16.00	16.35	16.70	17.05	17.40	17.75	18.10	18.45	18.81	19.16	19.52	19.88	20.24	20.60	20.96	21.32
7.8	CMC	21.43	22.03	22.63	23.24	23.84	24.45	25.06	25.67	26.28	26.90	27.51	28.13	28.75	29.37	30.00	30.62	31.25	31.88	32.51	33.15	33.78	34.42	35.06	35.70	36.34	36.99	37.63	38.28
	CCC	13.31	13.68	14.06	14.43	14.81	15.19	15.56	15.94	16.32	16.71	17.09	17.47	17.86	18.24	18.63	19.02	19.41	19.80	20.19	20.59	20.98	21.38	21.77	22.17	22.57	22.97	23.38	23.78
7.9	CMC	23.76	24.42	25.09	25.76	26.43	27.10	27.77	28.45	29.12	29.80	30.49	31.17	31.86	32.55	33.24	33.93	34.62	35.32	36.02	36.72	37.42	38.13	38.83	39.54	40.25	40.97	41.68	42.40
	CCC	14.76	15.17	15.58	16.00	16.41	16.83	17.25	17.67	18.09	18.51	18.94	19.36	19.79	20.21	20.64	21.07	21.50	21.94	22.37	22.81	23.24	23.68	24.12	24.56	25.00	25.45	25.89	26.34
8.0	CMC	26.14	26.87	27.60	28.34	29.07	29.81	30.55	31.29	32.04	32.79	33.54	34.29	35.04	35.80	36.55	37.31	38.08	38.84	39.61	40.38	41.15	41.92	42.70	43.48	44.26	45.04	45.83	46.62
	CCC	16.24	16.69	17.15	17.60	18.06	18.52	18.98	19.44	19.90	20.36	20.83	21.30	21.76	22.23	22.70	23.18	23.65	24.13	24.60	25.08	25.56	26.04	26.52	27.00	27.49	27.98	28.46	28.95
8.1	CMC	28.55	29.34	30.14	30.94	31.74	32.55	33.35	34.16	34.98	35.79	36.61	37.43	38.25	39.07	39.90	40.73	41.56	42.39	43.23	44.06	44.90	45.75	46.59	47.44	48.29	49.15	50.00	50.86
	CCC	17.73	18.22	18.72	19.22	19.72	20.22	20.72	21.22	21.72	22.23	22.74	23.25	23.76	24.27	24.78	25.30	25.81	26.33	26.85	27.37	27.89	28.41	28.94	29.47	29.99	30.53	31.06	31.59
8.2	CMC	30.93	31.79	32.65	33.52	34.39	35.26	36.13	37.01	37.89	38.77	39.65	40.54	41.42	42.31	43.21	44.10	45.00	45.90	46.81	47.71	48.62	49.53	50.45	51.36	52.28	53.20	54.13	55.06
	CCC	19.21	19.75	20.28	20.82	21.36	21.90	22.44	22.99	23.53	24.08	24.63	25.18	25.73	26.28	26.84	27.39	27.95	28.51	29.07	29.63	30.20	30.77	31.33	31.90	32.47	33.05	33.62	34.20
8.3	CMC	33.26	34.18	35.11	36.04	36.97	37.90	38.84	39.78	40.72	41.67	42.62	43.57	44.52	45.48	46.44	47.40	48.36	49.33	50.30	51.27	52.24	53.22	54.20	55.18	56.17	57.16	58.15	59.15
	CCC	20.66	21.23	21.81	22.38	22.96	23.54	24.13	24.71	25.30	25.88	26.47	27.06	27.65	28.25	28.84	29.44	30.04	30.64	31.24	31.84	32.45	33.06	33.67	34.28	34.89	35.50	36.12	36.74
8.4	CMC	35.50	36.48	37.47	38.46	39.45	40.45	41.45	42.45	43.46	44.46	45.47	46.49	47.50	48.52	49.54	50.56	51.59	52.62	53.65	54.69	55.72	56.77	57.81	58.86	59.91	60.96	62.02	63.07
	CCC	22.05	22.66	23.27	23.89	24.51	25.12	25.74	26.37	26.99	27.62	28.24	28.87	29.50	30.14	30.77	31.41	32.04	32.68	33.32	33.97	34.61	35.26	35.91	36.56	37.21	37.86	38.52	39.18
8.5	CMC	37.63	38.67	39.72	40.77	41.82	42.87	43.93	44.99	46.05	47.12	48.19	49.26	50.33	51.41	52.49	53.57	54.66	55.75	56.84	57.94	59.03	60.14	61.24	62.35	63.46	64.57	65.69	66.81
	CCC	23.37	24.02	24.67	25.32	25.97	26.63	27.29	27.94	28.60	29.27	29.93	30.60	31.26	31.93	32.60	33.28	33.95	34.63	35.31	35.99	36.67	37.35	38.04	38.73	39.42	40.11	40.80	41.50
8.6	CMC	39.64	40.74	41.84	42.94	44.05	45.16	46.27	47.39	48.51	49.63	50.75	51.88	53.01	54.14	55.28	56.42	57.56	58.71	59.85	61.00	62.16	63.32	64.48	65.64	66.81	67.98	69.15	70.33
	CCC	24.62	25.30	25.99	26.67	27.36	28.05	28.74	29.43	30.13	30.82	31.52	32.22	32.92	33.63	34.33	35.04	35.75	36.46	37.18	37.89	38.61	39.33	40.05	40.77	41.50	42.22	42.95	43.68
8.7	CMC	41.53	42.68	43.84	44.99	46.15	47.31	48.47	49.64	50.81	51.99	53.16	54.34	55.53	56.71	57.90	59.09	60.29	61.48	62.69	63.89	65.10	66.31	67.52	68.74	69.96	71.19	72.41	73.64
	CCC	25.80	26.51	27.23	27.94	28.66	29.39	30.11	30.83	31.56	32.29	33.02	33.75	34.49	35.22	35.96	36.70	37.44	38.19	38.94	39.68	40.43	41.19	41.94	42.70	43.45	44.21	44.98	45.74
8.8	CMC	43.32	44.52	45.72	46.92	48.13	49.34	50.55	51.77	52.99	54.21	55.44	56.66	57.90	59.13	60.37	61.61	62.86	64.10	65.36	66.61	67.87	69.13	70.39	71.66	72.93	74.21	75.48	76.76
	CCC	26.91	27.65	28.40	29.14	29.89	30.65	31.40	32.15	32.91	33.67	34.43	35.20	35.96	36.73	37.50	38.27	39.04	39.82	40.59	41.37	42.15	42.94	43.72	44.51	45.30	46.09	46.88	47.68
8.9	CMC	45.01	46.26	47.50	48.75	50.01	51.26	52.52	53.78	55.05	56.32	57.59	58.87	60.15	61.43	62.71	64.00	65.29	66.59	67.89	69.19	70.49	71.80	73.11	74.43	75.75	77.07	78.40	79.73
	CCC	27.96	28.73	29.51	30.28	31.06	31.84	32.62	33.41	34.19	34.98	35.77	36.56	37.36	38.15	38.95	39.75	40.55	41.36	42.17	42.97	43.78	44.60	45.41	46.23	47.05	47.87	48.69	49.52
9.0	CMC	46.64	47.92	49.21	50.51	51.78	53.08	54.39	55.69	57.00	58.32	59.63	60.95	62.28	63.61	64.94	66.27	67.61	68.95	70.29	71.64	72.99	74.35	75.70	77.06	78.43	79.80	81.17	82.55
	CCC	28.97	29.77	30.57	31.37	32.16	32.97	33.78	34.59	35.41	36.22	37.04	37.86	38.68	39.51	40.33	41.16	41.99	42.82	43.66	44.50	45.34	46.18	47.02	47.87	48.71	49.56	50.42	51.27

TABLE B - Stream Order 4 to 6.

pH	CMC (µg/L)	DOC (mg/L)																											
	CCC (µg/L)	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7
6.0	CMC	0.22	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.61	0.64	0.66	0.68	0.70	0.72	0.74	0.77	0.79
	CCC	0.14	0.15	0.16	0.17	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.37	0.38	0.40	0.41	0.42	0.44	0.45	0.46	0.48	0.49
6.1	CMC	0.28	0.31	0.33	0.36	0.39	0.42	0.44	0.47	0.50	0.52	0.55	0.58	0.61	0.63	0.66	0.69	0.72	0.75	0.77	0.80	0.83	0.86	0.89	0.91	0.94	0.97	1.00	1.03
	CCC	0.17	0.19	0.21	0.22	0.24	0.26	0.27	0.29	0.31	0.33	0.34	0.36	0.38	0.39	0.41	0.43	0.45	0.46	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.60	0.62	0.64
6.2	CMC	0.36	0.39	0.43	0.46	0.50	0.54	0.57	0.61	0.64	0.68	0.71	0.75	0.78	0.82	0.86	0.89	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.18	1.22	1.26	1.30	1.33
	CCC	0.22	0.25	0.27	0.29	0.31	0.33	0.35	0.38	0.40	0.42	0.44	0.46	0.49	0.51	0.53	0.55	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.78	0.80	0.83
6.3	CMC	0.46	0.50	0.55	0.59	0.64	0.68	0.73	0.77	0.82	0.87	0.91	0.96	1.00	1.05	1.10	1.14	1.19	1.24	1.28	1.33	1.38	1.42	1.47	1.52	1.57	1.61	1.66	1.71
	CCC	0.28	0.31	0.34	0.37	0.40	0.42	0.45	0.48	0.51	0.54	0.57	0.59	0.62	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.85	0.88	0.91	0.94	0.97	1.00	1.03	1.06
6.4	CMC	0.58	0.63	0.69	0.75	0.80	0.86	0.92	0.98	1.04	1.09	1.15	1.21	1.27	1.33	1.39	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	2.10	2.16
	CCC	0.36	0.39	0.43	0.46	0.50	0.54	0.57	0.61	0.64	0.68	0.72	0.75	0.79	0.82	0.86	0.90	0.93	0.97	1.01	1.04	1.08	1.12	1.16	1.19	1.23	1.27	1.30	1.34
6.5	CMC	0.72	0.79	0.86	0.93	1.00	1.07	1.15	1.22	1.29	1.36	1.43	1.51	1.58	1.65	1.73	1.80	1.87	1.95	2.02	2.10	2.17	2.24	2.32	2.39	2.47	2.54	2.62	2.69
	CCC	0.45	0.49	0.53	0.58	0.62	0.67	0.71	0.76	0.80	0.85	0.89	0.94	0.98	1.03	1.07	1.12	1.16	1.21	1.26	1.30	1.35	1.39	1.44	1.49	1.53	1.58	1.63	1.67
6.6	CMC	0.88	0.97	1.05	1.14	1.23	1.32	1.41	1.49	1.58	1.67	1.76	1.85	1.94	2.03	2.12	2.21	2.30	2.39	2.48	2.57	2.67	2.76	2.85	2.94	3.03	3.12	3.22	3.31
	CCC	0.55	0.60	0.65	0.71	0.76	0.82	0.87	0.93	0.98	1.04	1.09	1.15	1.21	1.26	1.32	1.37	1.43	1.49	1.54	1.60	1.66	1.71	1.77	1.83	1.88	1.94	2.00	2.05
6.7	CMC	1.06	1.17	1.28	1.38	1.49	1.60	1.70	1.81	1.92	2.03	2.13	2.24	2.35	2.46	2.57	2.68	2.79	2.90	3.01	3.12	3.23	3.34	3.45	3.56	3.67	3.78	3.90	4.01
	CCC	0.66	0.73	0.79	0.86	0.92	0.99	1.06	1.12	1.19	1.26	1.33	1.39	1.46	1.53	1.60	1.66	1.73	1.80	1.87	1.94	2.01	2.07	2.14	2.21	2.28	2.35	2.42	2.49
6.8	CMC	1.27	1.40	1.52	1.65	1.78	1.91	2.04	2.16	2.29	2.42	2.55	2.68	2.81	2.94	3.07	3.20	3.34	3.47	3.60	3.73	3.86	3.99	4.13	4.26	4.39	4.53	4.66	4.79
	CCC	0.79	0.87	0.95	1.03	1.11	1.18	1.26	1.34	1.42	1.51	1.59	1.67	1.75	1.83	1.91	1.99	2.07	2.15	2.24	2.32	2.40	2.48	2.56	2.65	2.73	2.81	2.89	2.98
6.9	CMC	1.50	1.65	1.80	1.96	2.11	2.26	2.41	2.56	2.72	2.87	3.02	3.18	3.33	3.48	3.64	3.79	3.95	4.10	4.26	4.42	4.57	4.73	4.89	5.04	5.20	5.36	5.52	5.68
	CCC	0.93	1.03	1.12	1.21	1.31	1.40	1.50	1.59	1.69	1.78	1.88	1.97	2.07	2.16	2.26	2.36	2.45	2.55	2.65	2.74	2.84	2.94	3.04	3.13	3.23	3.33	3.43	3.53
7.0	CMC	1.76	1.94	2.11	2.29	2.47	2.65	2.82	3.00	3.18	3.36	3.54	3.72	3.90	4.08	4.26	4.45	4.63	4.81	4.99	5.17	5.36	5.54	5.73	5.91	6.09	6.28	6.46	6.65
	CCC	1.09	1.20	1.31	1.42	1.53	1.64	1.75	1.87	1.98	2.09	2.20	2.31	2.42	2.54	2.65	2.76	2.87	2.99	3.10	3.21	3.33	3.44	3.56	3.67	3.79	3.90	4.01	4.13
7.1	CMC	2.05	2.25	2.46	2.66	2.87	3.08	3.29	3.49	3.70	3.91	4.12	4.33	4.54	4.75	4.96	5.17	5.38	5.60	5.81	6.02	6.23	6.45	6.66	6.88	7.09	7.30	7.52	7.74
	CCC	1.27	1.40	1.53	1.65	1.78	1.91	2.04	2.17	2.30	2.43	2.56	2.69	2.82	2.95	3.08	3.21	3.34	3.48	3.61	3.74	3.87	4.00	4.14	4.27	4.40	4.54	4.67	4.80
7.2	CMC	2.36	2.60	2.84	3.08	3.32	3.56	3.80	4.04	4.28	4.52	4.76	5.00	5.24	5.49	5.73	5.97	6.22	6.46	6.71	6.95	7.20	7.45	7.69	7.94	8.19	8.44	8.68	8.93
	CCC	1.47	1.62	1.76	1.91	2.06	2.21	2.36	2.51	2.66	2.81	2.96	3.11	3.26	3.41	3.56	3.71	3.86	4.01	4.17	4.32	4.47	4.62	4.78	4.93	5.09	5.24	5.39	5.55
7.3	CMC	2.71	2.99	3.26	3.53	3.81	4.08	4.36	4.63	4.91	5.19	5.46	5.74	6.02	6.30	6.58	6.86	7.14	7.42	7.70	7.98	8.27	8.55	8.83	9.12	9.40	9.69	9.97	10.26
	CCC	1.69	1.85	2.02	2.19	2.36	2.54	2.71	2.88	3.05	3.22	3.39	3.57	3.74	3.91	4.09	4.26	4.43	4.61	4.78	4.96	5.13	5.31	5.49	5.66	5.84	6.02	6.19	6.37
7.4	CMC	3.10	3.41	3.72	4.03	4.35	4.66	4.98	5.29	5.61	5.92	6.24	6.56	6.88	7.19	7.51	7.83	8.15	8.47	8.79	9.12	9.44	9.76	10.09	10.41	10.73	11.06	11.38	11.71
	CCC	1.92	2.12	2.31	2.51	2.70	2.90	3.09	3.29	3.48	3.68	3.88	4.07	4.27	4.47	4.67	4.86	5.06	5.26	5.46	5.66	5.86	6.06	6.26	6.47	6.67	6.87	7.07	7.27
7.5	CMC	3.52	3.87	4.23	4.58	4.94	5.30	5.65	6.01	6.37	6.73	7.09	7.45	7.81	8.17	8.53	8.90	9.26	9.62	9.99	10.35	10.72	11.09	11.45	11.82	12.19	12.56	12.93	13.30
	CCC	2.19	2.41	2.63	2.85	3.07	3.29	3.51	3.73	3.96	4.18	4.40	4.63	4.85	5.08	5.30	5.53	5.75	5.98	6.20	6.43	6.66	6.89	7.11	7.34	7.57	7.80	8.03	8.26
7.6	CMC	3.98	4.38	4.78	5.18	5.58	5.98	6.39	6.79	7.20	7.60	8.01	8.42	8.82	9.23	9.64	10.05	10.46	10.87	11.28	11.70	12.11	12.52	12.94	13.35	13.77	14.19	14.60	15.02
	CCC	2.47	2.72	2.97	3.22	3.47	3.72	3.97	4.22	4.47	4.72	4.97	5.23	5.48	5.73	5.99	6.24	6.50	6.75	7.01	7.27	7.52	7.78	8.04	8.29	8.55	8.81	9.07	9.33
7.7	CMC	4.47	4.92	5.37	5.82	6.27	6.72	7.18	7.63	8.08	8.54	9.00	9.45	9.91	10.37	10.83	11.29	11.75	12.21	12.68	13.14	13.60	14.07	14.53	15.00	15.47	15.93	16.40	16.87
	CCC	2.77	3.05	3.33	3.61	3.89	4.17	4.46	4.74	5.02	5.30	5.59	5.87	6.16	6.44	6.73	7.01	7.30	7.59	7.87	8.16	8.45	8.74	9.03	9.32	9.61	9.90	10.19	10.48
7.8	CMC	4.99	5.49	5.99	6.50	7.00	7.51	8.01	8.52	9.03	9.54	10.05	10.56	11.07	11.58	12.09	12.61	13.12	13.64	14.15	14.67	15.19	15.71	16.23	16.75	17.27	17.79	18.31	18.83
	CCC	3.10	3.41	3.72	4.04	4.35	4.66	4.98	5.29	5.61	5.92	6.24	6.56	6.87	7.19	7.51	7.83	8.15	8.47	8.79	9.11	9.43	9.76	10.08	10.40	10.72	11.05	11.37	11.70
7.9	CMC	5.54	6.09	6.65	7.21	7.77	8.33	8.89	9.45	10.02	10.58	11.15	11.71	12.28	12.85	13.42	13.99	14.56	15.13	15.70	16.27	16.85	17.42	18.00	18.58	19.15	19.73	20.31	20.89
	CCC	3.44	3.79	4.13	4.48	4.83	5.17	5.52	5.87	6.22	6.57	6.92	7.28	7.63	7.98	8.33	8.69	9.04	9.40	9.75	10.11	10.46	10.82	11.18	11.54	11.90	12.26	12.62	12.98
8.0	CMC	6.10	6.72	7.33	7.95	8.56	9.18	9.80	10.42	11.04	11.66	12.28	12.91	13.53	14.16	14.78	15.41	16.04	16.67	17.30	17.93	18.56	19.19	19.83	20.46	21.10	21.73	22.37	23.01
	CCC	3.79	4.17	4.55	4.94	5.32	5.70	6.09	6.47	6.86	7.24	7.63	8.02	8.40	8.79	9.18	9.57	9.96	10.35	10.74	11.14	11.53	11.92	12.31	12.71	13.10	13.50	13.89	14.29
8.1	CMC	6.69	7.36	8.03	8.70	9.38	10.05	10.73	11.41	12.09	12.77	13.45	14.13	14.81	15.50	16.18	16.87	17.56	18.25	18.94	19.63	20.32	21.01	21.70	22.40	23.09	23.79	24.49	25.18
	CCC	4.15	4.57	4.99	5.41	5.82	6.24	6.67	7.09	7.51	7.93	8.35	8.78	9.20	9.63	10.05	10.48	10.91	11.33	11.76	12.19	12.62	13.05	13.48	13.91	14.34	14.78	15.21	15.64
8.2	CMC	7.27	8.00	8.73	9.46	10.20	10.93	11.67	12.41	13.14	13.88	14.62	15.36	16.11	16.85	17.59	18.34	19.09	19.83	20.58	21.33	22.08	22.84	23.59	24.34	25.10	25.85	26.61	27.37
	CCC	4.52	4.97	5.42	5.88	6.33	6.79	7.25	7.71	8.16	8.62	9.08	9.54	10.00	10.47	10.93	11.39	11.85	12.32	12.78	13.25	13.72	14.18	14.65	15.12	15.59	16.06	16.53	17.00
8.3	CMC	7.86	8.64	9.43	10.22	11.02	11.81	12.60	13.40	14.20	14.99	15.79	16.59	17.39	18.20	19.00	19.80	20.61	21.42	22.22	23.03	23.84	24.65	25.47	26.28	27.09	27.91	28.73	29.54
	CCC	4.88	5.37	5.86	6.35	6.84	7.34	7.83	8.32	8.82	9.31	9.81	10.31	10.80	11.30	11.80	12.30	12.80	13.30	13.80	14.31	14.81	15.31	15.82	16.32	16.83	17.33	17.84	18.35
8.4	CMC	8.44	9.28	10.13	10.98	11.83	12.68	13.53	14.38	15.24	16.10	16.95	17.81	18.67	19.53	20.39	21.25	22.12	22.98	23.85	24.72	25.59	26.45	27.32	28.20	29.07	29.94	30.82	31.69
	CCC	5.24	5.77	6.29	6.82	7.35	7.88	8.40	8.93	9.47	10.00	10.53	11.06	11.60	12.13	12.67	13.20	13.74	14.28	14.81	15.35	15.89	16.43	16.97	17.51	18.06	18.60	19.14	19.68
8.5	CMC	9.01	9.91	10.81	11.72	12.63	13.54	14.44	15.35	16.27	17.18	18.09	19.01	19.93	20.84	21.76	22.68	23.60	24.52	25.45	26.37	27.30	28.23	29.15	30.08	31.01	31.94	32.87	33.81
	CCC	5.59	6.16	6.72	7.28	7.84	8.41	8.97	9.54	10.10	10.67	11.24	11.81	12.38	12.95	13.52	14.09	14.66	15.23	15.81	16.38	16.96	17.53	18.11	18.68	19.26	19.84	20.42	21.00
8.6	CMC	9.57	10.53	11.49	12.45	13.41	14.38	15.34	16.31	17.28	18.24	19.21	20.19	21.16	22.13	23.11	24.08	25.06	26.04	27.02	28.00	28.98	29.96	30.95	31.93	32.92	33.91	34.89	35.88
	CCC	5.94	6.54	7.14	7.73	8.33	8.93	9.53	10.13	10.73	11.33	11.93	12.54	13.14	13.75	14.35	14.96	15.57	16.17	16.78	17.39	18.00	18.61	19.22	19.83	20.45	21.06	21.67	22.29
8.7	CMC	10.12	11.14	12.15	13.17	14.19	15.20	16.22	17.25	18.27	19.29	20.32	21.34	22.37	23.40	24.43	25.46	26.49	27.53	28.56	29.60	30.63	31.67	32.71	33.75	34.79	35.83	36.88	37.92
	CCC	6.29	6.92	7.55	8.18	8.81	9.44	10.08	10.71	11.35	11.98	12.62	13.26	13.89	14.53	15.17	15.81	16.45	17.10	17.74	18.38	19.03	19.67	20.32	20.96	21.61	22.26	22.91	23.55
8.8	CMC	10.67	11.74	12.80	13.88	14.95	16.02	17.09	18.17	19.25	20.32	21.40	22.48	23.57	24.65	25.73	26.82	27.90	28.99	30.08	31.17	32.26	33.35	34.45	35.54	36.64	37.73	38.83	39.93
	CCC	6.63	7.29	7.95	8.62	9.28	9.95	10.62	11.29	11.95	12.62	13.29	13.97	14.64	15.31	15.98	16.66	17.33	18.01	18.68	19.36	20.04	20.72	21.40	22.08	22.76	23.44	24.12	24.80
8.9	CMC	11.21	12.33	13.45	14.58	15.70	16.83	17.95	19.08	20.21	21.35	22.48	23.61	24.75	25.88	27.02	28.16	29.30	30.44	31.58	32.73	33.87	35.02	36.16	37.31	38.46	39.61	40.76	41.92
	CCC	6.96	7.66	8.36	9.05	9.75	10.45	11.15	11.85	12.56	13.26	13.96	14.67	15.37	16.08	16.78	17.49	18.20	18.91	19.62	20.33	21.04	21.75	22.46	23.18	23.89	24.60	25.32	26.03
9.0	CMC	11.74	12.92	14.09	15.27	16.45	17.63	18.81	19.99	21.17	22.36	23.54	24.73	25.92	27.11	28.30	29.49	30.68	31.88	33.07	34.27	35.47	36.67	37.85	39.05	40.25	41.45	42.66	43.87
	CCC	7.29	8.02	8.75	9.48	10.22	10.95	11.68	12.42	13.15	13.89	14.62	15.36	16.10	16.84	17.58	18.32	19.06	19.80	20.54	21.29	22.03	22.77	23.51	24.25	25.00	25.75	26.50	27.25

pH	CMC (µg/L)	DOC (mg/L)																											
	CCC (µg/L)	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5
6.0	CMC	0.81	0.83	0.85	0.88	0.90	0.92	0.94	0.96	0.99	1.01	1.03	1.05	1.07	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.25	1.28	1.30	1.32	1.35	1.37	1.39	1.41
	CCC	0.50	0.52	0.53	0.54	0.56	0.57	0.58	0.60	0.61	0.63	0.64	0.65	0.67	0.68	0.70	0.71	0.72	0.74	0.75	0.77	0.78	0.79	0.81	0.82	0.84	0.85	0.86	0.88
6.1	CMC	1.06	1.09	1.11	1.14	1.17	1.20	1.23	1.26	1.29	1.32	1.35	1.38	1.41	1.43	1.46	1.49	1.52	1.55	1.58	1.61	1.64	1.67	1.70	1.73	1.76	1.79	1.82	1.85
	CCC	0.66	0.67	0.69	0.71	0.73	0.75	0.76	0.78	0.80	0.82	0.84	0.85	0.87	0.89	0.91	0.93	0.95	0.96	0.98	1.00	1.02	1.04	1.06	1.08	1.09	1.11	1.13	1.15
6.2	CMC	1.37	1.41	1.44	1.48	1.52	1.56	1.59	1.63	1.67	1.71	1.75	1.78	1.82	1.86	1.90	1.94	1.97	2.01	2.05	2.09	2.13	2.17	2.21	2.24	2.28	2.32	2.36	2.40
	CCC	0.85	0.87	0.90	0.92	0.94	0.97	0.99	1.01	1.04	1.06	1.08	1.11	1.13	1.16	1.18	1.20	1.23	1.25	1.27	1.30	1.32	1.35	1.37	1.39	1.42	1.44	1.47	1.49
6.3	CMC	1.76	1.80	1.85	1.90	1.95	2.00	2.04	2.09	2.14	2.19	2.24	2.29	2.34	2.38	2.43	2.48	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88	2.93	2.98	3.03	3.08
	CCC	1.09	1.12	1.15	1.18	1.21	1.24	1.27	1.30	1.33	1.36	1.39	1.42	1.45	1.48	1.51	1.54	1.57	1.60	1.63	1.66	1.70	1.73	1.76	1.79	1.82	1.85	1.88	1.91
6.4	CMC	2.22	2.28	2.34	2.40	2.46	2.52	2.59	2.65	2.71	2.77	2.83	2.89	2.95	3.02	3.08	3.14	3.20	3.27	3.33	3.39	3.45	3.52	3.58	3.64	3.70	3.77	3.83	3.89
	CCC	1.38	1.42	1.45	1.49	1.53	1.57	1.61	1.64	1.68	1.72	1.76	1.80	1.84	1.87	1.91	1.95	1.99	2.03	2.07	2.11	2.14	2.18	2.22	2.26	2.30	2.34	2.38	2.42
6.5	CMC	2.77	2.84	2.92	3.00	3.07	3.15	3.22	3.30	3.38	3.45	3.53	3.61	3.68	3.76	3.84	3.92	3.99	4.07	4.15	4.23	4.30	4.38	4.46	4.54	4.62	4.70	4.78	4.85
	CCC	1.72	1.77	1.81	1.86	1.91	1.95	2.00	2.05	2.10	2.14	2.19	2.24	2.29	2.34	2.38	2.43	2.48	2.53	2.58	2.63	2.67	2.72	2.77	2.82	2.87	2.92	2.97	3.02
6.6	CMC	3.40	3.49	3.59	3.68	3.77	3.87	3.96	4.05	4.15	4.24	4.34	4.43	4.53	4.62	4.71	4.81	4.90	5.00	5.10	5.19	5.29	5.38	5.48	5.58	5.67	5.77	5.87	5.96
	CCC	2.11	2.17	2.23	2.29	2.34	2.40	2.46	2.52	2.58	2.63	2.69	2.75	2.81	2.87	2.93	2.99	3.05	3.11	3.17	3.22	3.28	3.34	3.40	3.46	3.52	3.58	3.64	3.70
6.7	CMC	4.12	4.23	4.35	4.46	4.57	4.68	4.80	4.91	5.02	5.14	5.25	5.37	5.48	5.60	5.71	5.83	5.94	6.06	6.17	6.29	6.40	6.52	6.64	6.75	6.87	6.99	7.10	7.22
	CCC	2.56	2.63	2.70	2.77	2.84	2.91	2.98	3.05	3.12	3.19	3.26	3.33	3.40	3.48	3.55	3.62	3.69	3.76	3.83	3.91	3.98	4.05	4.12	4.19	4.27	4.34	4.41	4.48
6.8	CMC	4.93	5.06	5.20	5.33	5.47	5.60	5.74	5.87	6.01	6.15	6.28	6.42	6.55	6.69	6.83	6.97	7.11	7.25	7.39	7.52	7.66	7.80	7.94	8.08	8.22	8.36	8.50	8.64
	CCC	3.06	3.14	3.23	3.31	3.40	3.48	3.56	3.65	3.73	3.82	3.90	3.99	4.07	4.16	4.24	4.33	4.42	4.50	4.59	4.67	4.76	4.85	4.93	5.02	5.11	5.19	5.28	5.37
6.9	CMC	5.83	5.99	6.15	6.31	6.47	6.63	6.79	6.95	7.11	7.28	7.44	7.60	7.76	7.92	8.08	8.25	8.41	8.57	8.74	8.90	9.06	9.23	9.39	9.56	9.72	9.89	10.05	10.22
	CCC	3.62	3.72	3.82	3.92	4.02	4.12	4.22	4.32	4.42	4.52	4.62	4.72	4.82	4.92	5.02	5.12	5.22	5.32	5.43	5.53	5.63	5.73	5.83	5.94	6.04	6.14	6.24	6.35
7.0	CMC	6.84	7.02	7.21	7.39	7.58	7.77	7.96	8.14	8.33	8.52	8.71	8.90	9.09	9.28	9.47	9.66	9.85	10.04	10.23	10.42	10.61	10.81	11.00	11.19	11.38	11.58	11.77	11.96
	CCC	4.25	4.36	4.48	4.59	4.71	4.83	4.94	5.06	5.18	5.29	5.41	5.53	5.64	5.76	5.88	6.00	6.12	6.24	6.35	6.47	6.59	6.71	6.83	6.95	7.07	7.19	7.31	7.43
7.1	CMC	7.95	8.17	8.38	8.60	8.82	9.04	9.26	9.47	9.69	9.91	10.13	10.35	10.57	10.79	11.01	11.23	11.45	11.68	11.90	12.12	12.34	12.57	12.79	13.01	13.24	13.46	13.69	13.91
	CCC	4.94	5.07	5.21	5.34	5.48	5.61	5.75	5.88	6.02	6.16	6.29	6.43	6.57	6.70	6.84	6.98	7.11	7.25	7.39	7.53	7.67	7.81	7.94	8.08	8.22	8.36	8.50	8.64
7.2	CMC	9.18	9.43	9.68	9.93	10.18	10.44	10.69	10.94	11.19	11.45	11.70	11.95	12.21	12.46	12.72	12.97	13.23	13.48	13.74	14.00	14.25	14.51	14.77	15.03	15.28	15.54	15.80	16.06
	CCC	5.70	5.86	6.01	6.17	6.33	6.48	6.64	6.80	6.95	7.11	7.27	7.42	7.58	7.74	7.90	8.06	8.22	8.37	8.53	8.69	8.85	9.01	9.17	9.33	9.49	9.65	9.81	9.98
7.3	CMC	10.54	10.83	11.12	11.40	11.69	11.98	12.27	12.56	12.85	13.14	13.43	13.72	14.01	14.30	14.60	14.89	15.18	15.47	15.77	16.06	16.36	16.65	16.95	17.24	17.54	17.84	18.14	18.43
	CCC	6.55	6.73	6.90	7.08	7.26	7.44	7.62	7.80	7.98	8.16	8.34	8.52	8.70	8.88	9.07	9.25	9.43	9.61	9.79	9.98	10.16	10.34	10.53	10.71	10.90	11.08	11.26	11.45
7.4	CMC	12.04	12.36	12.69	13.02	13.35	13.68	14.01	14.34	14.67	15.00	15.33	15.66	16.00	16.33	16.66	17.00	17.33	17.66	18.00	18.34	18.67	19.01	19.35	19.68	20.02	20.36	20.70	21.04
	CCC	7.48	7.68	7.88	8.09	8.29	8.50	8.70	8.91	9.11	9.32	9.52	9.73	9.93	10.14	10.35	10.56	10.76	10.97	11.18	11.39	11.60	11.81	12.02	12.23	12.44	12.65	12.86	13.07
7.5	CMC	13.67	14.04	14.41	14.79	15.16	15.53	15.91	16.28	16.66	17.03	17.41	17.79	18.16	18.54	18.92	19.30	19.68	20.06	20.44	20.82	21.20	21.58	21.96	22.35	22.73	23.12	23.50	23.89
	CCC	8.49	8.72	8.95	9.18	9.42	9.65	9.88	10.11	10.35	10.58	10.81	11.05	11.28	11.52	11.75	11.99	12.22	12.46	12.69	12.93	13.17	13.41	13.64	13.88	14.12	14.36	14.60	14.84
7.6	CMC	15.44	15.86	16.28	16.70	17.12	17.54	17.96	18.39	18.81	19.24	19.66	20.09	20.51	20.94	21.36	21.79	22.22	22.65	23.08	23.51	23.94	24.37	24.80	25.23	25.67	26.10	26.53	26.97
	CCC	9.59	9.85	10.11	10.37	10.63	10.90	11.16	11.42	11.68	11.95	12.21	12.48	12.74	13.00	13.27	13.53	13.80	14.07	14.33	14.60	14.87	15.14	15.40	15.67	15.94	16.21	16.48	16.75
7.7	CMC	17.34	17.81	18.28	18.76	19.23	19.70	20.17	20.65	21.12	21.60	22.08	22.55	23.03	23.51	23.99	24.47	24.95	25.43	25.91	26.39	26.88	27.36	27.84	28.33	28.82	29.30	29.79	30.28
	CCC	10.77	11.06	11.36	11.65	11.94	12.24	12.53	12.83	13.12	13.42	13.71	14.01	14.31	14.60	14.90	15.20	15.50	15.80	16.09	16.39	16.69	16.99	17.29	17.60	17.90	18.20	18.50	18.80
7.8	CMC	19.36	19.88	20.41	20.94	21.46	21.99	22.52	23.05	23.58	24.11	24.64	25.17	25.70	26.24	26.77	27.31	27.84	28.38	28.92	29.45	29.99	30.53	31.07	31.61	32.15	32.69	33.24	33.78
	CCC	12.02	12.35	12.68	13.00	13.33	13.66	13.99	14.32	14.64	14.97	15.30	15.63	15.97	16.30	16.63	16.96	17.29	17.63	17.96	18.29	18.63	18.96	19.30	19.63	19.97	20.31	20.64	20.98
7.9	CMC	21.47	22.05	22.64	23.22	23.80	24.39	24.97	25.56	26.15	26.73	27.32	27.91	28.50	29.09	29.69	30.28	30.87	31.47	32.06	32.66	33.25	33.85	34.45	35.05	35.65	36.25	36.85	37.45
	CCC	13.34	13.70	14.06	14.42	14.78	15.15	15.51	15.88	16.24	16.61	16.97	17.34	17.70	18.07	18.44	18.81	19.18	19.54	19.91	20.28	20.65	21.02	21.40	21.77	22.14	22.51	22.89	23.26
8.0	CMC	23.65	24.29	24.93	25.57	26.21	26.85	27.50	28.14	28.79	29.44	30.08	30.73	31.38	32.03	32.68	33.33	33.98	34.64	35.29	35.95	36.60	37.26	37.92	38.57	39.23	39.89	40.55	41.21
	CCC	14.69	15.08	15.48	15.88	16.28	16.68	17.08	17.48	17.88	18.28	18.68	19.09	19.49	19.89	20.30	20.70	21.11	21.51	21.92	22.33	22.73	23.14	23.55	23.96	24.37	24.78	25.19	25.60
8.1	CMC	25.88	26.58	27.28	27.98	28.69	29.39	30.09	30.80	31.51	32.21	32.92	33.63	34.34	35.05	35.76	36.47	37.19	37.90	38.62	39.33	40.05	40.77	41.48	42.20	42.92	43.64	44.36	45.09
	CCC	16.08	16.51	16.95	17.38	17.82	18.25	18.69	19.13	19.57	20.01	20.45	20.89	21.33	21.77	22.21	22.65	23.10	23.54	23.98	24.43	24.87	25.32	25.77	26.21	26.66	27.11	27.56	28.00
8.2	CMC	28.13	28.89	29.65	30.41	31.17	31.93	32.70	33.46	34.23	35.00	35.76	36.53	37.30	38.07	38.85	39.62	40.39	41.17	41.94	42.72	43.50	44.28	45.05	45.83	46.61	47.40	48.18	48.96
	CCC	17.47	17.94	18.41	18.89	19.36	19.83	20.31	20.78	21.26	21.74	22.21	22.69	23.17	23.65	24.13	24.61	25.09	25.57	26.05	26.53	27.02	27.50	27.98	28.47	28.95	29.44	29.92	30.41
8.3	CMC	30.36	31.18	32.00	32.82	33.64	34.47	35.29	36.12	36.94	37.77	38.60	39.43	40.26	41.09	41.92	42.75	43.58	44.42	45.25	46.09	46.93	47.77	48.61	49.45	50.29	51.13	51.97	52.82
	CCC	18.86	19.37	19.88	20.39	20.90	21.41	21.92	22.43	22.95	23.46	23.97	24.49	25.00	25.52	26.04	26.55	27.07	27.59	28.11	28.63	29.15	29.67	30.19	30.71	31.23	31.76	32.28	32.81
8.4	CMC	32.57	33.45	34.33	35.21	36.09	36.97	37.85	38.74	39.62	40.51	41.39	42.28	43.17	44.06	44.95	45.84	46.74	47.63	48.52	49.42	50.32	51.21	52.11	53.01	53.91	54.81	55.72	56.62
	CCC	20.23	20.77	21.32	21.87	22.41	22.96	23.51	24.06	24.61	25.16	25.71	26.26	26.81	27.37	27.92	28.47	29.03	29.58	30.14	30.70	31.25	31.81	32.37	32.93	33.49	34.05	34.61	35.17
8.5	CMC	34.74	35.68	36.61	37.55	38.49	39.43	40.37	41.31	42.25	43.20	44.14	45.09	46.03	46.98	47.93	48.88	49.83	50.78	51.74	52.69	53.65	54.60	55.56	56.52	57.47	58.43	59.39	60.36
	CCC	21.58	22.16	22.74	23.32	23.91	24.49	25.07	25.66	26.24	26.83	27.42	28.01	28.59	29.18	29.77	30.36	30.95	31.54	32.13	32.73	33.32	33.91	34.51	35.10	35.70	36.29	36.89	37.49
8.6	CMC	36.87	37.87	38.86	39.85	40.85	41.84	42.84	43.84	44.84	45.84	46.84	47.84	48.85	49.85	50.85	51.86	52.87	53.88	54.89	55.90	56.91	57.92	58.93	59.95	60.96	61.98	63.00	64.02
	CCC	22.90	23.52	24.14	24.75	25.37	25.99	26.61	27.23	27.85	28.47	29.09	29.72	30.34	30.96	31.59	32.21	32.84	33.46	34.09	34.72	35.35	35.98	36.60	37.23	37.87	38.50	39.13	39.76
8.7	CMC	38.97	40.02	41.06	42.11	43.16	44.21	45.27	46.32	47.37	48.43	49.49	50.54	51.60	52.66	53.72	54.78	55.85	56.91	57.98	59.04	60.11	61.18	62.25	63.32	64.39	65.46	66.53	67.61
	CCC	24.20	24.85	25.51	26.16	26.81	27.46	28.12	28.77	29.42	30.08	30.74	31.39	32.05	32.71	33.37	34.03	34.69	35.35	36.01	36.67	37.34	38.00	38.66	39.33	39.99	40.66	41.32	41.99
8.8	CMC	41.03	42.13	43.23	44.34	45.44	46.55	47.65	48.76	49.87	50.98	52.09	53.20	54.32	55.43	56.55	57.66	58.78	59.90	61.02	62.14	63.26	64.38	65.50	66.63	67.75	68.88	70.01	71.14
	CCC	25.49	26.17	26.85	27.54	28.22	28.91	29.60	30.29	30.98	31.67	32.36	33.05	33.74	34.43	35.12	35.82	36.51	37.20	37.90	38.59	39.29	39.99	40.69	41.38	42.08	42.78	43.48	44.18
8.9	CMC	43.07	44.22	45.38	46.54	47.70	48.85	50.01	51.18	52.34	53.50	54.67	55.83	57.00	58.17	59.34	60.50	61.68	62.85	64.02	65.19	66.37	67.55	68.72	69.90	71.08	72.26	73.44	74.62
	CCC	26.75	27.47	28.19	28.91	29.62	30.34	31.07	31.79	32.51	33.23	33.95	34.68	35.40	36.13	36.85	37.58	38.31	39.04	39.76	40.49	41.22	41.95	42.68	43.42	44.15	44.88	45.62	46.35
9.0	CMC	45.07	46.28	47.49	48.70	49.91	51.13	52.34	53.55	54.77	55.99	57.21	58.42	59.64	60.87	62.09	63.31	64.54	65.76	66.99	68.21	69.44	70.67	71.90	73.13	74.37	75.60	76.83	78.07
	CCC	28.00	28.75	29.50	30.25	31.00	31.76	32.51	33.26	34.02	34.77	35.53	36.29	37.05	37.80	38.56	39.32	40.08	40.84	41.61	42.37	43.13	43.90	44.66	45.42	46.19	46.96	47.72	48.49

TABLE C - Stream Order 7 to 9.

pH	CMC (µg/L)	DOC (mg/L)																		
	CCC (µg/L)	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
6.0	CMC	0.31	0.33	0.36	0.38	0.41	0.43	0.46	0.48	0.51	0.53	0.56	0.58	0.60	0.63	0.65	0.68	0.70	0.73	0.75
	CCC	0.19	0.21	0.22	0.24	0.25	0.27	0.28	0.30	0.31	0.33	0.34	0.36	0.38	0.39	0.41	0.42	0.44	0.45	0.47
6.1	CMC	0.38	0.41	0.45	0.48	0.51	0.54	0.57	0.61	0.64	0.67	0.70	0.73	0.77	0.80	0.83	0.86	0.90	0.93	0.96
	CCC	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.60
6.2	CMC	0.47	0.51	0.55	0.59	0.63	0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.96	1.01	1.05	1.09	1.13	1.17	1.21
	CCC	0.29	0.32	0.34	0.37	0.39	0.42	0.45	0.47	0.50	0.52	0.55	0.57	0.60	0.62	0.65	0.68	0.70	0.73	0.75
6.3	CMC	0.58	0.63	0.68	0.73	0.79	0.84	0.89	0.94	0.99	1.05	1.10	1.15	1.20	1.26	1.31	1.36	1.41	1.47	1.52
	CCC	0.36	0.39	0.42	0.46	0.49	0.52	0.55	0.59	0.62	0.65	0.68	0.72	0.75	0.78	0.81	0.85	0.88	0.91	0.94
6.4	CMC	0.71	0.77	0.84	0.90	0.97	1.03	1.10	1.16	1.23	1.29	1.36	1.42	1.49	1.55	1.62	1.68	1.75	1.81	1.88
	CCC	0.44	0.48	0.52	0.56	0.60	0.64	0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.96	1.00	1.05	1.09	1.13	1.17
6.5	CMC	0.86	0.94	1.01	1.09	1.17	1.25	1.33	1.41	1.49	1.57	1.65	1.73	1.81	1.90	1.98	2.06	2.14	2.22	2.30
	CCC	0.53	0.58	0.63	0.68	0.73	0.78	0.83	0.88	0.93	0.98	1.03	1.08	1.13	1.18	1.23	1.28	1.33	1.38	1.43
6.6	CMC	1.03	1.12	1.22	1.31	1.41	1.51	1.60	1.70	1.80	1.90	1.99	2.09	2.19	2.29	2.39	2.48	2.58	2.68	2.78
	CCC	0.64	0.70	0.76	0.82	0.88	0.94	1.00	1.06	1.12	1.18	1.24	1.30	1.36	1.42	1.48	1.54	1.60	1.66	1.73
6.7	CMC	1.22	1.33	1.45	1.56	1.68	1.80	1.91	2.03	2.14	2.26	2.38	2.50	2.61	2.73	2.85	2.96	3.08	3.20	3.32
	CCC	0.76	0.83	0.90	0.97	1.04	1.12	1.19	1.26	1.33	1.40	1.48	1.55	1.62	1.70	1.77	1.84	1.91	1.99	2.06
6.8	CMC	1.43	1.57	1.71	1.84	1.98	2.12	2.26	2.39	2.53	2.67	2.81	2.95	3.09	3.23	3.37	3.51	3.65	3.78	3.92
	CCC	0.89	0.97	1.06	1.15	1.23	1.32	1.40	1.49	1.57	1.66	1.75	1.83	1.92	2.00	2.09	2.18	2.26	2.35	2.44
6.9	CMC	1.67	1.83	1.99	2.16	2.32	2.48	2.64	2.80	2.97	3.13	3.29	3.46	3.62	3.78	3.95	4.11	4.27	4.44	4.60
	CCC	1.04	1.14	1.24	1.34	1.44	1.54	1.64	1.74	1.84	1.94	2.04	2.15	2.25	2.35	2.45	2.55	2.65	2.76	2.86
7.0	CMC	1.94	2.13	2.32	2.51	2.69	2.88	3.07	3.26	3.45	3.64	3.83	4.02	4.21	4.40	4.59	4.79	4.98	5.17	5.36
	CCC	1.21	1.32	1.44	1.56	1.67	1.79	1.91	2.03	2.14	2.26	2.38	2.50	2.62	2.74	2.85	2.97	3.09	3.21	3.33
7.1	CMC	2.24	2.46	2.68	2.90	3.11	3.33	3.55	3.77	3.99	4.21	4.43	4.65	4.87	5.10	5.32	5.54	5.76	5.98	6.20
	CCC	1.39	1.53	1.66	1.80	1.93	2.07	2.21	2.34	2.48	2.62	2.75	2.89	3.03	3.16	3.30	3.44	3.58	3.72	3.85
7.2	CMC	2.57	2.82	3.08	3.33	3.58	3.83	4.09	4.34	4.59	4.84	5.10	5.35	5.61	5.86	6.12	6.37	6.63	6.88	7.14
	CCC	1.60	1.75	1.91	2.07	2.22	2.38	2.54	2.69	2.85	3.01	3.17	3.32	3.48	3.64	3.80	3.96	4.12	4.28	4.43
7.3	CMC	2.94	3.23	3.52	3.81	4.10	4.38	4.67	4.96	5.25	5.55	5.84	6.13	6.42	6.71	7.00	7.30	7.59	7.88	8.17
	CCC	1.83	2.01	2.19	2.36	2.54	2.72	2.90	3.08	3.26	3.44	3.62	3.81	3.99	4.17	4.35	4.53	4.71	4.90	5.08
7.4	CMC	3.35	3.68	4.01	4.33	4.66	4.99	5.32	5.65	5.99	6.32	6.65	6.98	7.31	7.65	7.98	8.31	8.65	8.98	9.32
	CCC	2.08	2.28	2.49	2.69	2.90	3.10	3.31	3.51	3.72	3.92	4.13	4.34	4.54	4.75	4.96	5.16	5.37	5.58	5.79
7.5	CMC	3.79	4.17	4.54	4.91	5.29	5.66	6.04	6.41	6.79	7.16	7.54	7.92	8.29	8.67	9.05	9.43	9.81	10.18	10.56
	CCC	2.36	2.59	2.82	3.05	3.28	3.52	3.75	3.98	4.22	4.45	4.68	4.92	5.15	5.39	5.62	5.86	6.09	6.33	6.56
7.6	CMC	4.28	4.70	5.12	5.54	5.96	6.39	6.81	7.23	7.66	8.08	8.51	8.93	9.36	9.78	10.21	10.64	11.07	11.49	11.92
	CCC	2.66	2.92	3.18	3.44	3.70	3.97	4.23	4.49	4.76	5.02	5.28	5.55	5.81	6.08	6.34	6.61	6.87	7.14	7.40
7.7	CMC	4.80	5.27	5.74	6.22	6.69	7.17	7.64	8.12	8.59	9.07	9.55	10.03	10.50	10.98	11.46	11.94	12.42	12.90	13.38
	CCC	2.98	3.27	3.57	3.86	4.16	4.45	4.75	5.04	5.34	5.63	5.93	6.23	6.52	6.82	7.12	7.42	7.71	8.01	8.31
7.8	CMC	5.36	5.88	6.41	6.94	7.47	8.00	8.53	9.06	9.59	10.13	10.66	11.19	11.73	12.26	12.79	13.33	13.87	14.40	14.94
	CCC	3.33	3.65	3.98	4.31	4.64	4.97	5.30	5.63	5.96	6.29	6.62	6.95	7.28	7.62	7.95	8.28	8.61	8.95	9.28
7.9	CMC	5.95	6.53	7.12	7.71	8.29	8.88	9.47	10.06	10.65	11.24	11.83	12.42	13.02	13.61	14.20	14.80	15.39	15.99	16.58
	CCC	3.69	4.06	4.42	4.79	5.15	5.52	5.88	6.25	6.61	6.98	7.35	7.72	8.08	8.45	8.82	9.19	9.56	9.93	10.30
8.0	CMC	6.56	7.20	7.85	8.50	9.15	9.80	10.45	11.10	11.75	12.40	13.06	13.71	14.36	15.02	15.67	16.32	16.98	17.64	18.29
	CCC	4.08	4.47	4.88	5.28	5.68	6.08	6.49	6.89	7.30	7.70	8.11	8.51	8.92	9.33	9.73	10.14	10.55	10.95	11.36
8.1	CMC	7.20	7.91	8.62	9.33	10.04	10.76	11.47	12.18	12.90	13.61	14.33	15.04	15.76	16.48	17.19	17.91	18.63	19.35	20.07
	CCC	4.47	4.91	5.35	5.80	6.24	6.68	7.12	7.57	8.01	8.45	8.90	9.34	9.79	10.23	10.68	11.13	11.57	12.02	12.47
8.2	CMC	7.86	8.63	9.41	10.18	10.96	11.74	12.51	13.29	14.07	14.85	15.63	16.41	17.19	17.97	18.76	19.54	20.32	21.11	21.89
	CCC	4.88	5.36	5.84	6.33	6.81	7.29	7.77	8.26	8.74	9.22	9.71	10.19	10.68	11.16	11.65	12.14	12.62	13.11	13.60
8.3	CMC	8.53	9.37	10.21	11.06	11.90	12.74	13.59	14.43	15.27	16.12	16.97	17.81	18.66	19.51	20.36	21.21	22.06	22.91	23.76
	CCC	5.30	5.82	6.34	6.87	7.39	7.91	8.44	8.96	9.49	10.01	10.54	11.06	11.59	12.12	12.64	13.17	13.70	14.23	14.76
8.4	CMC	9.22	10.13	11.04	11.95	12.86	13.77	14.68	15.59	16.50	17.41	18.33	19.24	20.16	21.07	21.99	22.90	23.82	24.74	25.66
	CCC	5.73	6.29	6.86	7.42	7.99	8.55	9.12	9.68	10.25	10.82	11.38	11.95	12.52	13.09	13.66	14.23	14.80	15.37	15.94
8.5	CMC	9.92	10.90	11.88	12.85	13.83	14.81	15.79	16.77	17.75	18.73	19.71	20.70	21.68	22.66	23.65	24.63	25.62	26.60	27.59
	CCC	6.16	6.77	7.38	7.98	8.59	9.20	9.81	10.42	11.02	11.63	12.24	12.85	13.46	14.08	14.69	15.30	15.91	16.52	17.14
8.6	CMC	10.64	11.68	12.73	13.78	14.82	15.87	16.92	17.97	19.02	20.07	21.12	22.17	23.22	24.28	25.33	26.39	27.44	28.50	29.55
	CCC	6.61	7.26	7.91	8.56	9.21	9.86	10.51	11.16	11.81	12.47	13.12	13.77	14.43	15.08	15.73	16.39	17.04	17.70	18.36
8.7	CMC	11.36	12.48	13.59	14.71	15.83	16.95	18.07	19.18	20.30	21.43	22.55	23.67	24.79	25.92	27.04	28.16	29.29	30.41	31.54
	CCC	7.06	7.75	8.44	9.14	9.83	10.53	11.22	11.92	12.61	13.31	14.00	14.70	15.40	16.10	16.79	17.49	18.19	18.89	19.59
8.8	CMC	12.09	13.28	14.47	15.65	16.84	18.03	19.22	20.41	21.60	22.79	23.99	25.18	26.37	27.57	28.76	29.96	31.15	32.35	33.55
	CCC	7.51	8.25	8.99	9.72	10.46	11.20	11.94	12.68	13.42	14.16	14.90	15.64	16.38	17.12	17.86	18.61	19.35	20.09	20.84
8.9	CMC	12.82	14.08	15.34	16.60	17.86	19.12	20.38	21.64	22.90	24.17	25.43	26.69	27.96	29.22	30.49	31.75	33.02	34.29	35.56
	CCC	7.97	8.75	9.53	10.31	11.09	11.87	12.66	13.44	14.23	15.01	15.79	16.58	17.36	18.15	18.94	19.72	20.51	21.30	22.08
9.0	CMC	13.55	14.88	16.21	17.54	18.87	20.20	21.53	22.86	24.19	25.53	26.86	28.20	29.53	30.87	32.20	33.54	34.88	36.22	37.55
	CCC	8.41	9.24	10.07	10.89	11.72	12.55	13.37	14.20	15.03	15.86	16.68	17.51	18.34	19.17	20.00	20.83	21.66	22.49	23.33

pH	CMC (µg/L)	DOC (mg/L)																		
	CCC (µg/L)	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7
6.0	CMC	0.78	0.80	0.83	0.85	0.88	0.90	0.93	0.95	0.98	1.01	1.03	1.06	1.08	1.11	1.13	1.16	1.18	1.21	1.23
	CCC	0.48	0.50	0.51	0.53	0.55	0.56	0.58	0.59	0.61	0.62	0.64	0.66	0.67	0.69	0.70	0.72	0.74	0.75	0.77
6.1	CMC	0.99	1.03	1.06	1.09	1.12	1.16	1.19	1.22	1.25	1.29	1.32	1.35	1.39	1.42	1.45	1.49	1.52	1.55	1.59
	CCC	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.76	0.78	0.80	0.82	0.84	0.86	0.88	0.90	0.92	0.94	0.96	0.98
6.2	CMC	1.26	1.30	1.34	1.38	1.42	1.46	1.51	1.55	1.59	1.63	1.68	1.72	1.76	1.80	1.85	1.89	1.93	1.97	2.02
	CCC	0.78	0.81	0.83	0.86	0.88	0.91	0.94	0.96	0.99	1.01	1.04	1.07	1.09	1.12	1.15	1.17	1.20	1.23	1.25
6.3	CMC	1.57	1.63	1.68	1.73	1.78	1.84	1.89	1.94	2.00	2.05	2.10	2.16	2.21	2.27	2.32	2.37	2.43	2.48	2.54
	CCC	0.98	1.01	1.04	1.08	1.11	1.14	1.17	1.21	1.24	1.27	1.31	1.34	1.37	1.41	1.44	1.47	1.51	1.54	1.57
6.4	CMC	1.95	2.01	2.08	2.15	2.21	2.28	2.34	2.41	2.48	2.54	2.61	2.68	2.75	2.81	2.88	2.95	3.01	3.08	3.15
	CCC	1.21	1.25	1.29	1.33	1.37	1.41	1.46	1.50	1.54	1.58	1.62	1.66	1.71	1.75	1.79	1.83	1.87	1.91	1.96
6.5	CMC	2.38	2.46	2.54	2.63	2.71	2.79	2.87	2.95	3.03	3.12	3.20	3.28	3.36	3.45	3.53	3.61	3.69	3.78	3.86
	CCC	1.48	1.53	1.58	1.63	1.68	1.73	1.78	1.83	1.88	1.94	1.99	2.04	2.09	2.14	2.19	2.24	2.29	2.35	2.40
6.6	CMC	2.88	2.98	3.07	3.17	3.27	3.37	3.47	3.57	3.67	3.77	3.87	3.97	4.07	4.17	4.27	4.37	4.47	4.57	4.67
	CCC	1.79	1.85	1.91	1.97	2.03	2.09	2.16	2.22	2.28	2.34	2.40	2.46	2.53	2.59	2.65	2.71	2.78	2.84	2.90
6.7	CMC	3.44	3.55	3.67	3.79	3.91	4.03	4.15	4.27	4.39	4.51	4.62	4.74	4.86	4.98	5.10	5.22	5.34	5.46	5.58
	CCC	2.13	2.21	2.28	2.36	2.43	2.50	2.58	2.65	2.72	2.80	2.87	2.95	3.02	3.10	3.17	3.24	3.32	3.39	3.47
6.8	CMC	4.06	4.20	4.35	4.49	4.63	4.77	4.91	5.05	5.19	5.33	5.47	5.62	5.76	5.90	6.04	6.18	6.33	6.47	6.61
	CCC	2.52	2.61	2.70	2.79	2.87	2.96	3.05	3.14	3.22	3.31	3.40	3.49	3.58	3.66	3.75	3.84	3.93	4.02	4.11
6.9	CMC	4.77	4.93	5.10	5.26	5.43	5.59	5.76	5.92	6.09	6.26	6.42	6.59	6.76	6.92	7.09	7.26	7.42	7.59	7.76
	CCC	2.96	3.06	3.17	3.27	3.37	3.47	3.58	3.68	3.78	3.89	3.99	4.09	4.20	4.30	4.40	4.51	4.61	4.71	4.82
7.0	CMC	5.55	5.74	5.94	6.13	6.32	6.52	6.71	6.90	7.10	7.29	7.48	7.68	7.87	8.07	8.26	8.46	8.65	8.85	9.04
	CCC	3.45	3.57	3.69	3.81	3.93	4.05	4.17	4.29	4.41	4.53	4.65	4.77	4.89	5.01	5.13	5.25	5.37	5.49	5.62
7.1	CMC	6.43	6.65	6.87	7.10	7.32	7.54	7.77	7.99	8.21	8.44	8.66	8.89	9.11	9.34	9.57	9.79	10.02	10.24	10.47
	CCC	3.99	4.13	4.27	4.41	4.55	4.68	4.82	4.96	5.10	5.24	5.38	5.52	5.66	5.80	5.94	6.08	6.22	6.36	6.50
7.2	CMC	7.40	7.65	7.91	8.17	8.42	8.68	8.94	9.20	9.46	9.71	9.97	10.23	10.49	10.75	11.01	11.27	11.53	11.79	12.05
	CCC	4.59	4.75	4.91	5.07	5.23	5.39	5.55	5.71	5.87	6.03	6.19	6.36	6.52	6.68	6.84	7.00	7.16	7.32	7.49
7.3	CMC	8.47	8.76	9.06	9.35	9.65	9.94	10.24	10.53	10.83	11.12	11.42	11.72	12.01	12.31	12.61	12.91	13.21	13.50	13.80
	CCC	5.26	5.44	5.63	5.81	5.99	6.17	6.36	6.54	6.73	6.91	7.09	7.28	7.46	7.65	7.83	8.02	8.20	8.39	8.57
7.4	CMC	9.65	9.99	10.32	10.66	10.99	11.33	11.67	12.00	12.34	12.68	13.02	13.35	13.69	14.03	14.37	14.71	15.05	15.39	15.73
	CCC	5.99	6.20	6.41	6.62	6.83	7.04	7.25	7.46	7.67	7.87	8.08	8.29	8.51	8.72	8.93	9.14	9.35	9.56	9.77
7.5	CMC	10.94	11.32	11.70	12.09	12.47	12.85	13.23	13.61	14.00	14.38	14.76	15.15	15.53	15.91	16.30	16.68	17.07	17.46	17.84
	CCC	6.80	7.03	7.27	7.51	7.74	7.98	8.22	8.46	8.69	8.93	9.17	9.41	9.65	9.88	10.12	10.36	10.60	10.84	11.08
7.6	CMC	12.35	12.78	13.21	13.64	14.07	14.50	14.93	15.36	15.79	16.23	16.66	17.09	17.53	17.96	18.39	18.83	19.26	19.70	20.13
	CCC	7.67	7.94	8.20	8.47	8.74	9.01	9.27	9.54	9.81	10.08	10.35	10.62	10.89	11.15	11.42	11.69	11.96	12.23	12.50
7.7	CMC	13.86	14.34	14.83	15.31	15.79	16.28	16.76	17.24	17.73	18.21	18.70	19.19	19.67	20.16	20.65	21.13	21.62	22.11	22.60
	CCC	8.61	8.91	9.21	9.51	9.81	10.11	10.41	10.71	11.01	11.31	11.61	11.92	12.22	12.52	12.82	13.13	13.43	13.73	14.04
7.8	CMC	15.48	16.01	16.55	17.09	17.63	18.17	18.71	19.25	19.79	20.33	20.87	21.41	21.96	22.50	23.04	23.59	24.13	24.68	25.22
	CCC	9.61	9.95	10.28	10.61	10.95	11.28	11.62	11.96	12.29	12.63	12.96	13.30	13.64	13.97	14.31	14.65	14.99	15.33	15.67
7.9	CMC	17.18	17.77	18.37	18.97	19.57	20.16	20.76	21.36	21.96	22.56	23.16	23.76	24.37	24.97	25.57	26.17	26.78	27.38	27.99
	CCC	10.67	11.04	11.41	11.78	12.15	12.52	12.90	13.27	13.64	14.01	14.39	14.76	15.13	15.51	15.88	16.26	16.63	17.01	17.38
8.0	CMC	18.95	19.61	20.27	20.92	21.58	22.24	22.90	23.56	24.23	24.89	25.55	26.21	26.88	27.54	28.20	28.87	29.53	30.20	30.87
	CCC	11.77	12.18	12.59	13.00	13.41	13.82	14.23	14.64	15.05	15.46	15.87	16.28	16.69	17.11	17.52	17.93	18.34	18.76	19.17
8.1	CMC	20.79	21.51	22.23	22.96	23.68	24.40	25.13	25.85	26.57	27.30	28.03	28.75	29.48	30.21	30.94	31.66	32.39	33.12	33.85
	CCC	12.91	13.36	13.81	14.26	14.71	15.16	15.61	16.06	16.51	16.96	17.41	17.86	18.31	18.76	19.21	19.67	20.12	20.57	21.03
8.2	CMC	22.68	23.46	24.25	25.04	25.83	26.61	27.40	28.19	28.98	29.77	30.56	31.36	32.15	32.94	33.73	34.53	35.32	36.12	36.91
	CCC	14.09	14.57	15.06	15.55	16.04	16.53	17.02	17.51	18.00	18.49	18.98	19.48	19.97	20.46	20.95	21.45	21.94	22.43	22.93
8.3	CMC	24.61	25.46	26.31	27.17	28.02	28.88	29.73	30.59	31.44	32.30	33.16	34.02	34.87	35.73	36.59	37.45	38.31	39.17	40.04
	CCC	15.29	15.81	16.34	16.87	17.40	17.94	18.47	19.00	19.53	20.06	20.59	21.13	21.66	22.19	22.73	23.26	23.80	24.33	24.87
8.4	CMC	26.58	27.50	28.42	29.34	30.26	31.18	32.10	33.03	33.95	34.87	35.80	36.72	37.65	38.58	39.50	40.43	41.36	42.29	43.22
	CCC	16.51	17.08	17.65	18.22	18.79	19.37	19.94	20.51	21.09	21.66	22.24	22.81	23.38	23.96	24.54	25.11	25.69	26.27	26.84
8.5	CMC	28.58	29.57	30.55	31.54	32.53	33.52	34.51	35.50	36.50	37.49	38.48	39.48	40.47	41.47	42.46	43.46	44.45	45.45	46.45
	CCC	17.75	18.36	18.98	19.59	20.21	20.82	21.44	22.05	22.67	23.29	23.90	24.52	25.14	25.76	26.37	26.99	27.61	28.23	28.85
8.6	CMC	30.61	31.67	32.72	33.78	34.84	35.90	36.96	38.02	39.08	40.15	41.21	42.27	43.33	44.40	45.46	46.53	47.59	48.66	49.73
	CCC	19.01	19.67	20.33	20.98	21.64	22.30	22.96	23.62	24.28	24.94	25.60	26.26	26.92	27.58	28.24	28.90	29.56	30.22	30.89
8.7	CMC	32.67	33.79	34.92	36.05	37.18	38.31	39.44	40.57	41.70	42.84	43.97	45.10	46.23	47.37	48.50	49.64	50.77	51.91	53.05
	CCC	20.29	20.99	21.69	22.39	23.09	23.80	24.50	25.20	25.90	26.61	27.31	28.01	28.72	29.42	30.13	30.83	31.54	32.24	32.95
8.8	CMC	34.74	35.94	37.14	38.34	39.54	40.74	41.94	43.14	44.34	45.55	46.75	47.95	49.16	50.36	51.57	52.78	53.98	55.19	56.40
	CCC	21.58	22.32	23.07	23.81	24.56	25.30	26.05	26.80	27.54	28.29	29.04	29.79	30.53	31.28	32.03	32.78	33.53	34.28	35.03
8.9	CMC	36.82	38.09	39.36	40.63	41.90	43.18	44.45	45.72	46.99	48.27	49.54	50.81	52.09	53.36	54.64	55.92	57.19	58.47	59.75
	CCC	22.87	23.66	24.45	25.24	26.03	26.82	27.61	28.40	29.19	29.98	30.77	31.56	32.35	33.15	33.94	34.73	35.52	36.32	37.11
9.0	CMC	38.89	40.23	41.57	42.91	44.23	45.57	46.92	48.26	49.60	50.95	52.29	53.64	54.98	56.33	57.67	59.02	60.37	61.72	63.07
	CCC	24.16	24.99	25.82	26.65	27.47	28.31	29.14	29.97	30.81	31.64	32.48	33.31	34.15	34.99	35.82	36.66	37.50	38.33	39.17

pH	CMC (µg/L)	DOC (mg/L)																	
	CCC (µg/L)	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5
6.0	CMC	1.26	1.29	1.31	1.34	1.36	1.39	1.41	1.44	1.47	1.49	1.52	1.54	1.57	1.60	1.62	1.65	1.67	1.70
	CCC	0.78	0.80	0.81	0.83	0.85	0.86	0.88	0.89	0.91	0.93	0.94	0.96	0.98	0.99	1.01	1.02	1.04	1.06
6.1	CMC	1.62	1.65	1.69	1.72	1.75	1.79	1.82	1.85	1.89	1.92	1.95	1.99	2.02	2.05	2.09	2.12	2.16	2.19
	CCC	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15	1.17	1.19	1.21	1.23	1.26	1.28	1.30	1.32	1.34	1.36
6.2	CMC	2.06	2.10	2.14	2.19	2.23	2.27	2.32	2.36	2.40	2.45	2.49	2.53	2.58	2.62	2.66	2.71	2.75	2.79
	CCC	1.28	1.31	1.33	1.36	1.39	1.41	1.44	1.47	1.49	1.52	1.55	1.57	1.60	1.63	1.65	1.68	1.71	1.73
6.3	CMC	2.59	2.64	2.70	2.75	2.81	2.86	2.92	2.97	3.02	3.08	3.13	3.19	3.24	3.30	3.35	3.41	3.46	3.52
	CCC	1.61	1.64	1.68	1.71	1.74	1.78	1.81	1.84	1.88	1.91	1.95	1.98	2.01	2.05	2.08	2.12	2.15	2.19
6.4	CMC	3.22	3.28	3.35	3.42	3.49	3.55	3.62	3.69	3.76	3.83	3.89	3.96	4.03	4.10	4.17	4.24	4.31	4.37
	CCC	2.00	2.04	2.08	2.12	2.17	2.21	2.25	2.29	2.33	2.38	2.42	2.46	2.50	2.55	2.59	2.63	2.67	2.72
6.5	CMC	3.94	4.02	4.11	4.19	4.27	4.36	4.44	4.52	4.61	4.69	4.78	4.86	4.94	5.03	5.11	5.20	5.28	5.36
	CCC	2.45	2.50	2.55	2.60	2.65	2.71	2.76	2.81	2.86	2.91	2.97	3.02	3.07	3.12	3.18	3.23	3.28	3.33
6.6	CMC	4.77	4.87	4.97	5.07	5.17	5.27	5.38	5.48	5.58	5.68	5.78	5.88	5.99	6.09	6.19	6.29	6.39	6.50
	CCC	2.96	3.03	3.09	3.15	3.21	3.28	3.34	3.40	3.46	3.53	3.59	3.65	3.72	3.78	3.84	3.91	3.97	4.03
6.7	CMC	5.71	5.83	5.95	6.07	6.19	6.31	6.43	6.55	6.67	6.80	6.92	7.04	7.16	7.28	7.40	7.53	7.65	7.77
	CCC	3.54	3.62	3.69	3.77	3.84	3.92	3.99	4.07	4.15	4.22	4.30	4.37	4.45	4.52	4.60	4.68	4.75	4.83
6.8	CMC	6.75	6.90	7.04	7.18	7.33	7.47	7.61	7.76	7.90	8.05	8.19	8.33	8.48	8.62	8.77	8.91	9.06	9.20
	CCC	4.20	4.28	4.37	4.46	4.55	4.64	4.73	4.82	4.91	5.00	5.09	5.18	5.27	5.36	5.45	5.54	5.63	5.72
6.9	CMC	7.93	8.09	8.26	8.43	8.60	8.77	8.94	9.10	9.27	9.44	9.61	9.79	9.96	10.13	10.30	10.47	10.64	10.80
	CCC	4.92	5.03	5.13	5.24	5.34	5.45	5.55	5.66	5.76	5.87	5.97	6.08	6.19	6.29	6.40	6.50	6.61	6.71
7.0	CMC	9.24	9.43	9.63	9.83	10.02	10.22	10.42	10.61	10.81	11.01	11.20	11.40	11.60	11.80	11.99	12.19	12.39	12.59
	CCC	5.74	5.86	5.98	6.10	6.22	6.35	6.47	6.59	6.71	6.84	6.96	7.08	7.20	7.33	7.45	7.57	7.70	7.82
7.1	CMC	10.70	10.92	11.15	11.38	11.60	11.83	12.06	12.29	12.52	12.75	12.97	13.20	13.43	13.66	13.89	14.12	14.35	14.58
	CCC	6.64	6.78	6.93	7.07	7.21	7.35	7.49	7.63	7.77	7.92	8.06	8.20	8.34	8.48	8.63	8.77	8.91	9.06
7.2	CMC	12.31	12.57	12.84	13.10	13.36	13.62	13.88	14.15	14.41	14.67	14.94	15.20	15.46	15.73	15.99	16.25	16.52	16.78
	CCC	7.65	7.81	7.97	8.14	8.30	8.46	8.62	8.79	8.95	9.11	9.28	9.44	9.60	9.77	9.93	10.10	10.26	10.42
7.3	CMC	14.10	14.40	14.70	15.00	15.30	15.60	15.90	16.20	16.50	16.80	17.11	17.41	17.71	18.01	18.31	18.62	18.92	19.22
	CCC	8.76	8.94	9.13	9.32	9.50	9.69	9.88	10.06	10.25	10.44	10.62	10.81	11.00	11.19	11.38	11.56	11.75	11.94
7.4	CMC	16.07	16.41	16.75	17.10	17.44	17.78	18.12	18.47	18.81	19.15	19.50	19.84	20.18	20.53	20.87	21.22	21.56	21.91
	CCC	9.98	10.19	10.41	10.62	10.83	11.04	11.26	11.47	11.68	11.90	12.11	12.32	12.54	12.75	12.96	13.18	13.39	13.61
7.5	CMC	18.23	18.62	19.00	19.39	19.78	20.17	20.55	20.94	21.33	21.72	22.11	22.50	22.89	23.28	23.67	24.06	24.45	24.85
	CCC	11.32	11.56	11.80	12.04	12.28	12.53	12.77	13.01	13.25	13.49	13.73	13.98	14.22	14.46	14.70	14.95	15.19	15.43
7.6	CMC	20.57	21.01	21.44	21.88	22.32	22.76	23.19	23.63	24.07	24.51	24.95	25.39	25.83	26.27	26.71	27.15	27.59	28.03
	CCC	12.78	13.05	13.32	13.59	13.86	14.13	14.40	14.68	14.95	15.22	15.49	15.77	16.04	16.31	16.59	16.86	17.14	17.41
7.7	CMC	23.09	23.58	24.07	24.56	25.05	25.54	26.03	26.52	27.01	27.51	28.00	28.49	28.98	29.48	29.97	30.47	30.96	31.46
	CCC	14.34	14.64	14.95	15.25	15.56	15.86	16.17	16.47	16.78	17.08	17.39	17.70	18.00	18.31	18.62	18.92	19.23	19.54
7.8	CMC	25.77	26.31	26.86	27.41	27.95	28.50	29.05	29.60	30.15	30.70	31.25	31.80	32.35	32.90	33.45	34.00	34.55	35.10
	CCC	16.00	16.34	16.68	17.02	17.36	17.70	18.04	18.38	18.72	19.07	19.41	19.75	20.09	20.43	20.78	21.12	21.46	21.80
7.9	CMC	28.59	29.20	29.80	30.41	31.02	31.62	32.23	32.84	33.45	34.06	34.67	35.28	35.89	36.50	37.11	37.72	38.33	38.94
	CCC	17.76	18.13	18.51	18.89	19.26	19.64	20.02	20.40	20.78	21.15	21.53	21.91	22.29	22.67	23.05	23.43	23.81	24.19
8.0	CMC	31.53	32.20	32.87	33.54	34.20	34.87	35.54	36.21	36.88	37.55	38.23	38.90	39.57	40.24	40.91	41.59	42.26	42.94
	CCC	19.59	20.00	20.41	20.83	21.24	21.66	22.08	22.49	22.91	23.33	23.74	24.16	24.58	24.99	25.41	25.83	26.25	26.67
8.1	CMC	34.58	35.31	36.05	36.78	37.51	38.24	38.98	39.71	40.44	41.18	41.91	42.65	43.39	44.12	44.86	45.60	46.34	47.07
	CCC	21.48	21.93	22.39	22.84	23.30	23.75	24.21	24.66	25.12	25.58	26.03	26.49	26.95	27.41	27.86	28.32	28.78	29.24
8.2	CMC	37.71	38.50	39.30	40.10	40.90	41.69	42.49	43.29	44.09	44.89	45.69	46.49	47.30	48.10	48.90	49.70	50.51	51.31
	CCC	23.42	23.92	24.41	24.91	25.40	25.90	26.39	26.89	27.39	27.88	28.38	28.88	29.38	29.87	30.37	30.87	31.37	31.87
8.3	CMC	40.90	41.76	42.62	43.49	44.35	45.22	46.08	46.95	47.81	48.68	49.55	50.42	51.29	52.15	53.02	53.89	54.76	55.63
	CCC	25.40	25.94	26.48	27.01	27.55	28.09	28.62	29.16	29.70	30.24	30.78	31.31	31.85	32.39	32.93	33.47	34.01	34.56
8.4	CMC	44.15	45.08	46.01	46.94	47.87	48.80	49.73	50.67	51.60	52.54	53.47	54.41	55.34	56.28	57.22	58.15	59.09	60.03
	CCC	27.42	28.00	28.58	29.15	29.73	30.31	30.89	31.47	32.05	32.63	33.21	33.79	34.37	34.96	35.54	36.12	36.70	37.29
8.5	CMC	47.45	48.45	49.44	50.44	51.44	52.44	53.45	54.45	55.45	56.45	57.46	58.46	59.46	60.47	61.47	62.48	63.48	64.49
	CCC	29.47	30.09	30.71	31.33	31.95	32.57	33.20	33.82	34.44	35.06	35.69	36.31	36.93	37.56	38.18	38.81	39.43	40.06
8.6	CMC	50.80	51.86	52.93	54.00	55.07	56.14	57.21	58.28	59.35	60.42	61.50	62.57	63.64	64.72	65.79	66.87	67.94	69.02
	CCC	31.55	32.21	32.88	33.54	34.20	34.87	35.53	36.20	36.87	37.53	38.20	38.86	39.53	40.20	40.86	41.53	42.20	42.87
8.7	CMC	54.18	55.32	56.46	57.60	58.74	59.88	61.02	62.16	63.30	64.44	65.59	66.73	67.87	69.02	70.16	71.31	72.45	73.60
	CCC	33.66	34.36	35.07	35.78	36.48	37.19	37.90	38.61	39.32	40.03	40.74	41.45	42.16	42.87	43.58	44.29	45.00	45.71
8.8	CMC	57.60	58.81	60.02	61.23	62.44	63.65	64.86	66.07	67.28	68.50	69.71	70.92	72.14	73.35	74.56	75.78	77.00	78.21
	CCC	35.78	36.53	37.28	38.03	38.78	39.53	40.29	41.04	41.79	42.54	43.30	44.05	44.80	45.56	46.31	47.07	47.82	48.58
8.9	CMC	61.03	62.31	63.58	64.86	66.15	67.43	68.71	69.99	71.27	72.56	73.84	75.12	76.41	77.69	78.98	80.26	81.55	82.83
	CCC	37.90	38.70	39.49	40.29	41.08	41.88	42.68	43.47	44.27	45.07	45.86	46.66	47.46	48.26	49.05	49.85	50.65	51.45
9.0	CMC	64.41	65.77	67.12	68.47	69.82	71.17	72.52	73.87	75.22	76.58	77.93	79.28	80.64	81.99	83.35	84.71	86.06	87.42
	CCC	40.01	40.85	41.69	42.53	43.36	44.20	45.04	45.88	46.72	47.56	48.40	49.25	50.09	50.93	51.77	52.61	53.45	54.30