Appendix V

DBP Water Monitoring Plan
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DBP Monitoring Plan
(Quarterly Schedule)

This template should be used by:

* Surface water systems who serve more than 500 population and are not on reduced monitoring
* Surface water systems who serve more than 10,000 population on reduced monitoring
* Groundwater systems who serve more than 10,000 population and are not on reduced monitoring
* Any system that is on increased quarterly monitoring

For more information, refer to the Reference Sheets on the separate tabs

System Name: City of Bonney Lake
PWSID#: 07650H
Population: 37,708
Type of Source Water: Groundwater
Completed by: Ursulla Ronscavage
Date: 2/4/2020

Routine Monitoring Requirements

| Monitoring Frequency (Routine Monitoring): | Quarterly |
| Number of TTHM Samples Required: | 2 |
| Number of HAAS Samples Required: | 2 |

Reduced Monitoring Schedule

| Monitoring Frequency (Reduced Monitoring): | Quarterly |
| Number of TTHM Samples Required: | 2 |
| Number of HAAS Samples Required: | 2 |

Monitoring Locations and Month Assigned

<table>
<thead>
<tr>
<th>Monitoring Location (Name of Site)</th>
<th>Assigned Sampling Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>21727 34th St. E.</td>
<td>February, 3rd Week</td>
</tr>
<tr>
<td>6606 Vandermark Rd. E.</td>
<td>February, 3rd Week</td>
</tr>
</tbody>
</table>

Determining Compliance for TTHM and HAAS

Our system is required to monitor quarterly. Each quarter we will calculate a locational running annual average (LRAA) for TTHM and HAAS at each monitoring location. Compliance will be achieved if the TTHM and the HAAS LRAA at each monitoring location for the four most recent quarters is less than or equal to 0.080 mg/L for TTHM and less than or equal to 0.060 mg/l for HAAS.

Because compliance is based on a locational running annual average, the same location(s) must be used each quarter.
Operational Evaluation Level (OEL)
Calculated each quarter using the most recent 3 quarters of sample results, with Q3 being the most recent (multiplied by 2) and Q1 being the first of the 3 quarters.

\[
OEL = \frac{[Q_1 + Q_2 + 2\times(Q3)]}{4}
\]

If the calculated OEL exceeds the MCLs for TTHM (0.080 mg/L) or HAA5 (0.060 mg/L) then the system has an OEL exceedance and is required to conduct an operational evaluation and submit a report within 90 days.

To qualify for reduced monitoring:

The TTHM LRAA must be less than or equal to 0.040 mg/L AND the HAA LRAA must be less than or equal to 0.030 mg/L at each monitoring location.

AND for systems that use surface water the source water annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L (based on routine monthly samples or reduced quarterly samples). Please note, if you are a wholesale customer, you will need to get this data from your supplying system.

Disinfectant Residual Monitoring
Chlorine residuals must be measured at the same time and place as routine or repeat coliform samples MRDL for chlorine and chloramines = 4.0 mg/l as Cl₂

Determining Compliance for disinfectant residuals
Compliance is based on the running annual average (RAA) of 12 consecutive months. Daily residual measurements will / will not be included in the compliance calculations (circle one)

(Attach a distribution map with sample locations. You will need to print a hard copy for your records and make it available upon request. You do not need to submit a copy to DOH. If you need this publication in an alternate format, call (800) 525-0127. For TTY/TDD call (800) 833-6388.)
### General Criteria for Qualifying for Reduced Monitoring:

- TTHM LRAA is ≤ 0.040 mg/L for all samples.
- HAAs LRAA is ≤ 0.030 mg/L for all samples.
- For surface water, RAA raw water TOC ≤ 4.0 mg/L.

For purchasing systems, you are required to ensure your supplier is collecting this data.

### General Criteria to Remain on Reduced Monitoring

Systems on quarterly maintain a LRAA for all locations below 40/30.

For purchasing systems, you are required to ensure your supplier is collecting this data.

### Stage 2 DBP Reduced Monitoring Requirements

<table>
<thead>
<tr>
<th>Source Water Type</th>
<th>Population Range</th>
<th>Reduced Monitoring Frequency</th>
<th>Number of Samples Required</th>
<th>Details for Samples Required and Monitoring Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water</td>
<td>&lt; 500</td>
<td>No Reduction Allowed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Water</td>
<td>500 - 3,300</td>
<td>Reduced to Annual</td>
<td>2 Samples Total</td>
<td>&gt; One location for TTHM and one location for HAAs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt; The TTHM sample should be taken at the location and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt; The HAAs sample should be taken at the location and</td>
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<tr>
<td></td>
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<td>&gt; The TTHM sample should be taken at the location and</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt; The HAAs sample should be taken at the location and</td>
</tr>
<tr>
<td>Groundwater</td>
<td>&lt; 500</td>
<td>Reduced to Every 3 Years</td>
<td>2 Samples; One TTHM and one HAAs</td>
<td>&gt; One location for TTHM and one location for HAAs</td>
</tr>
<tr>
<td>Groundwater</td>
<td>500 - 9,999</td>
<td>Annual</td>
<td>2 Samples; One TTHM and one HAAs</td>
<td>&gt; One location for TTHM and one location for HAAs</td>
</tr>
</tbody>
</table>

(LRAA = Locational Running Annual Average, which is the average of all samples over a year period at a specific sample location.)
<table>
<thead>
<tr>
<th>Source Water Type</th>
<th>Population Range</th>
<th>Reduced Monitoring Frequency</th>
<th>Number of Samples Required</th>
<th>Details for Samples Required and Monitoring Locations</th>
</tr>
</thead>
</table>
| Groundwater       | 10,000 - 99,999   | Reduced to Annual and Fewer Sample Sites | 2 Dual Sample Sets | - Two sample sets of TTHM and HAA5 samples (monitor two locations for both TTHM and HAA5)  
                        > If the highest TTHM and HAA5 results were during different quarters then collect one dual sample set during the highest TTHM quarter and the other sample set during the highest HAA5 quarter. |
| Groundwater       | 100,000 - 499,999 | Stays Quarterly - (Number of samples taken each quarter is reduced) | 2 Dual Sample Sets | - Two sample sets of TTHM and HAA5 samples (monitor two locations for both TTHM and HAA5)  
                        > Collect one TTHM/HAA5 sample set at the location with highest Locational Running Annual Average (LAA) for TTHM.  
                        > Collect the second TTHM/HAA5 sample set at the location with highest Locational Running Annual Average (LAA) for HAA5. |