

Appendix U
Initial Distribution System Evaluation

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Disinfection Byproducts Monitoring Plan

System Name	City of Bonney Lake	Type and Population of System	GW only >10,000
PWSID#	07650H		
Date	1/21/2004		
Completed by	Triss Weber/Rick Shannon		

Monitoring requirements are additive; for example a system using ozone and chlorine, or chlorine with conventional filtration must meet the monitoring requirements for both.

Treatment Provided

Chlorine (gas, hypochlorite, etc) or Chloramines

Identify the number of "Treatment Plants" serving your system

A "Treatment Plant" or "TP" may be:

- A single surface water source
- A single well source
- A combination of multiple, individual sources (if all of the water is blended prior to distribution)

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Enter Description of Treatment Plant Below

TP1	Victor Falls-11700 Rhodes Lake Rd E, Permanent use, gas chlorine, no other treatment.
TP2	Grainger Springs-18100 Hwy 410, Permanent use, gas chlorine, no other treatment.
TP3	Ball Park Well-6001 192nd Ave E, Seasonal, Sodium Hypochlorite, Calciquest-Liquid (Phospates), no other treatment
TP4	Tacoma Point Well (2, 4, 6) Wellfield- 1110 182nd Ave E, Permanent use, Sodium Hypochlorite, Caustic Soda.

Disinfectant Monitoring

Required:

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

Compliance

Compliance is based on the running annual average (RAA) of 12 consecutive months
DOH will determine compliance for chlorine MRDL
Daily residual measurements will will not be included in the compliance calculations (circle one)

Byproduct Monitoring

Required:

TTHM & HAA5 - 1 sample per quarter per treatment plant (four samples total)
[samples should be collected at MRT relative to each treatment plant]
TTHM MCL = 0.080 mg/l, HAA5 MCL = 0.060 mg/l

Compliance

Compliance is based on the Running Annual Average (RAA) of quarterly results or averages
Any RAA of quarterly averages that exceeds the MCL is a violation
DOH will determine compliance for TTHM & HAA5 based on data submitted by the lab

Specify sampling location(s) for:

TTHM & HAA5	Enter Sampling Locations	Enter sampling schedule
TP1 (MRT)	Sample tap: 21301 Hwy 410, Safeway Store	Feb. 11, May 12, Aug. 11, Nov. 10
TP2 (MRT)	Sample tap: 3914 West Tapps Hwy, Crestwood Elem.	Feb. 11, May 12, Aug. 11, Nov. 10
TP3 (MRT)	Sample tap: 21727 34th St E, Dieringer Hgts Elem.	Feb. 11, May 12, Aug. 11, Nov. 10
TP4 (MRT)	Sample tap: 20851 60th St E (seasonal/emergency)	Feb. 11, May 12, Aug. 11, Nov. 10
	Site used if in operation 15 days or more in quarter	

No information needed here

TP2: Alternate sites: 21212 83rd St E (Ball Park on)	Months of high demand, sample sites may
TP2: Alt site: 5346 W Tapps Hwy (Ball Park off)	change due to maximum day demand
TP4: Alternate site: 7715 176th Ave E	(peak use). Alternate sites given.

Attach a distribution map with sample locations

Reduced Monitoring

To qualify for reduced monitoring the following criteria must be met (and State must approve).

TTHM RAA < 0.040 mg/l AND HAA5 RAA < 0.030 mg/l for two consecutive years

Monitoring may then be reduced to 1 sample per treatment plant per year during month of warmest water temperature

Standard Monitoring Plan

I. GENERAL INFORMATION

A. PWS Information*

PWSID: WA5307650
 PWS Name: Bonney Lake Water Department, City
 PWS Address: P.O. Box 7380
 City: Bonney Lake State: Washington Zip: 98391
 Population Served: 30,920

B. Date Submitted

System Type: (X)	Source Water Type: (X)	Buying / Selling Relationships: (
<input checked="" type="checkbox"/> CWS	<input checked="" type="checkbox"/> Subpart H	<input checked="" type="checkbox"/> Consecutive System
<input type="checkbox"/> NTNCWS	<input type="checkbox"/> Ground	<input type="checkbox"/> Wholesale System
		<input type="checkbox"/> Neither

C. PWS Operations

Residual Disinfectant Type: (X)
 Chlorine Chloramines Other: _____
 Number of Disinfected Sources:
 Surface GWUDI 4 Ground Purchased

D. Contact Person*

Name: Richard Shannon David Cihak
 Title: Assistant Public Works Director Water Treatment Plant Operator
 Phone #: (253) 862-8602 Fax #: (253) 447-4330
 E-mail: shannonr@ci.bonney-lake.wa.us cihakd@ci.bonney-lake.wa.us

II. IDSE REQUIREMENTS

A. Number of Compliance	B. Schedule	C. Compliance Monitoring Frequency
<u>1</u> Near Entry Point	<input type="checkbox"/> Schedule 1	<input type="checkbox"/> During peak historical month (1 monitoring period)
<u>2</u> Avg Residence Time	<input type="checkbox"/> Schedule 2	<input type="checkbox"/> Every 90 days (4 monitoring periods)
<u>3</u> Highest TTHM	<input checked="" type="checkbox"/> Schedule 3	<input checked="" type="checkbox"/> Every 60 days (6 monitoring periods)
<u>2</u> Highest HAA5	<input type="checkbox"/> Schedule 4	
<u>8</u> Total		

Standard Monitoring Plan

III. SELECTING STANDARD MONITORING SITES

A. Data Evaluated Put an "X" in each box corresponding to the data that you used to select each type of standard monitoring site. Check all that apply.

Data Type	Type of Site			
	Near Entry Pt.	Avg. Residence Time	High TTHM	High HAA5
System Configuration				
Pipe layout, locations of storage facilities		x	x	x
Locations of sources and consecutive system entry points	x	x	x	x
Pressure zones			x	x
Information on population density				
Locations of large customers				
Water Quality and Operational Data	x	x		
Disinfectant residual data		x		
Stage 1 DBP data			x	x
Other DBP data				
Microbiological monitoring data (e.g., HPC)				
Tank level data, pump run times				
Customer billing records				
Advanced Tools				
Water distribution system model			x	x
Tracer study				

B. Summary of Data* Provide a summary of data you relied on to justify standard monitoring site selection. (attach additional sheets if needed)

*Near Entry Point: Sample location is close to the consistently highest production source.

*Average Residence Time: Two sample sites were chosen based on 2006-2007 chlorine residual data from coliform monitoring sites. Sample sites were most frequently near system wide chlorine residuals (0.38-0.39 mg/l free chlorine). Sample sites were also selected due to the system layout and consistent year round access. These are dedicated water quality monitoring sites.

*The high TTHM and HAA5 sample sites were chosen by reviewing historical data from Stage 1 Monitoring results. Results were compared with system schematic to determine areas influenced by sources used in Stage 1 Monitoring. Stage 1 sites were chosen by engineers using hydraulic models.

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V. JUSTIFICATION OF STANDARD MONITORING SITES

Standard Monitoring Site ID (from map) ¹	Site Type	Justification
Entry Point	<input checked="" type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Close to entry point of highest production source. Sample site is
ART-1	<input type="checkbox"/> Near Entry Pt <input checked="" type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Chlorine residual data from 2006-2007 used to identify this local
ART-2	<input type="checkbox"/> Near Entry Pt <input checked="" type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Same as above.
TTHM-1	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input checked="" type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	All TTHM and HAA5 sample sites were chosen by reviewing Sta
TTHM-2	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input checked="" type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Same as above.
TTHM-3	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input checked="" type="checkbox"/> High TTHM <input type="checkbox"/> High HAA5	Same as above.
HAA5-1	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input checked="" type="checkbox"/> High HAA5	Same as above.
HAA5-2	<input type="checkbox"/> Near Entry Pt <input type="checkbox"/> Avg. Res. Time <input type="checkbox"/> High TTHM <input checked="" type="checkbox"/> High HAA5	Same as above.

¹ Verify that site IDs match IDs in Section IV and on your distribution system schematic (See Section VII of this form). Attach additional copies if you are required to select more than 8 standard monitoring locations or need more room.

Standard Monitoring Plan

V. PEAK HISTORICAL MONTH AND PROPOSED STANDARD MONITORING SCHEDULE

A. Peak Historical Month* August

B. If Multiple Sources, Source Used to Determine Peak Historical Month

(write "N/A" if only one source in your system)

C. Peak Historical Month Based On* (check all that apply)

- High TTHM Warmest water temperature
- High HAA5

If you used other information to select your peak historical month, explain here
(attach additional sheets if needed)

D. Proposed Standard Monitoring Schedule*

Standard Monitoring Site ID (from map) ¹	Projected Sampling Date (date or week) ²					
	period 1	period 2	period 3	period 4	period 5	period 6
Entry Point	1/28-2/1/08	3/24-3/28/08	5/26-5/30/08	8/4-8/8/08	9/22-9/26/08	12/1-12/5/08
ART-1	"	"	"	"	"	"
ART-2	"	"	"	"	"	"
TTHM-1	"	"	"	"	"	"
TTHM-2	"	"	"	"	"	"
TTHM-3	"	"	"	"	"	"
HAA5-1	"	"	"	"	"	"
HAA5-2	"	"	"	"	"	"

¹ Verify that site IDs match IDs in Section IV and on your distribution system schematic (See Section VII of this form). Attach additional copies if you are required to select more than 8 standard monitoring locations.

² period = monitoring period. Complete for the number of periods from Section II.C. Can list exact date or week (e.g., week of 7/9/07)

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VI. PLANNED STAGE 1 DBPR COMPLIANCE MONITORING SCHEDULE*

Stage 1 DBPR Monitoring Site ID (from map) ¹	Projected Sampling Date (date or week) ²			
	Period 1	Period 2	Period 3	Period 4
S1-1	2/11-2/15/08	5/26-5/30/08	8/4-8/8/08	11/3-11/7/08
S1-2	"	"	"	"
S1-3	"	"	"	"
S1-4	"	"	"	"

¹ Verify that site IDs match IDs on your distribution system schematic (See Section VII of this form). Attach additional copies if you are required to monitor at more than 8 Stage 1 DBPR sites.

² period = monitoring period. Complete for the number of periods in which you must conduct Stage 1 DBPR monitoring during IDSE monitoring. Can list exact date or week (e.g., week of 7/9/07)

VII. DISTRIBUTION SYSTEM SCHEMATIC*

ATTACH a schematic of your distribution system.

Distribution system schematics are not confidential and should not contain information that poses a security risk to your system. EPA recommends that you use one of two options:

Option 1: Distribution system schematic with no landmarks or addresses indicated. Show locations of sources, entry points, storage facilities, standard monitoring locations, and Stage 1 compliance monitoring locations (required). Also include pressure zone boundaries and locations of pump stations. Provide map scale.

Option 2: City map without locations of pipes indicated. Show locations of sources, entry points, storage facilities, standard monitoring locations, and Stage 1 compliance monitoring locations (required). Also include boundaries of the distribution system, pressure zone boundaries and locations of pump stations. Provide map scale.

Standard Monitoring Plan

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VIII. ATTACHMENTS

- Distribution System Schematic* (Section VII).
- Additional sheets for the summary of data or site justifications (Sections III and IV).
- Additional copies of Page 3 for justification of Standard Monitoring Sites (Section IV). Required if you are a subpart H system serving more than 49,999 people or a ground water system serving more than 499,999 people.
- Additional sheets for explaining how you used data other than TTHM, HAA5, and temperature data to select your peak historical month (Section V).
- Additional copies of Page 4 for proposed monitoring schedule (Section V). Required if you are a subpart H system serving more than 49,999 people or a ground water system serving more than 499,999 people.
- Additional sheets for planned Stage 1 DBPR compliance monitoring schedule (Section VI).

Total Number of Pages in Your Plan _____

Note: Fields with an asterisk (*) are required by the Stage 2 DBPR