# Example Coliform Monitoring Plan

**Coliform Monitoring Plan for: XYZ Water Association\_**

1. **System Information Plan Date: 4/5/16**

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| **Water System Name****XYZ Water System** | **County****Spokane** | **System I.D. Number****XXXXXA** |
| **Name of Plan Preparer****Johnny Spokane** | **Position****Operator** | **Daytime Phone #****509-111-2222** |
| **Sources:** DOH Source Number, Source Name, Well Depth, Pumping Capacity | #S01 - Well 1, 225 ft, 20gpm#S02 - Well 2, 175 ft, 90gpm#S03 - Spring, 150gpm |
| **Storage:** List and Describe | 1. X Tank - 200,000 gallon tank

 2. Y, Z Tank - 500,000 gallon tank |
| **Treatment:** Source Number & Process | Treatment Plant 001 – S01 Chlorination w/o 4-log virus treatmentTreatment Plant 002 – S02 Chlorination w/o 4-log virus treatmentTreatment Plant 003 – S03 Chlorination w/4-log virus treatment – not conducting Compliance Monitoring |
| **Pressure Zones:** Number and name | X – Upper ZoneY Z |
| **Population by Pressure Zone** | Pressure Zone X – 750 peoplePressure Zone Y – 1,250 peoplePressure Zone Z – 550 people |
| **Number of Routine Samples Required Monthly by Regulation: 3** | **Number of Sample Sites Needed to Represent the Distribution System: 4** |
| **\*Request DOH Approval of Triggered Source Monitoring Plan?** |  **Yes [x]  No [ ]**  |  |

\*If approval is requested a fee will be charged for the review.

1. **Laboratory Information**

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| **Laboratory Name**You Betcha Laboratory | **Office Phone #**(509) 111-2222 |
| **Address**Close Enough RoadSpokane, WA 99204 | **After Hours #**(800) 111-2222 |
| **Hours of Operation**Monday – Friday 8 a.m. to 5 p.m., Weekends on request only |
| **Contact Name**Lanny Labcoat |
| **Emergency Laboratory Name**Can Do Lab Inc | **Office Phone #** (509) 111-2222 |
| **Address**Little Further Away RoadSpokane Valley, WA 99216 | **After Hours #**(888) 111-2222 |
| **Hours of Operation**Monday–Friday 8 a.m. to 5 p.m., Weekends on request only |
| **Contact Name**Peter Dish |

1. **Wholesaling of Groundwater**

|  |  |  |
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|  | **Yes** | **No** |
| **We are a consecutive system and purchase groundwater from another water system.** | **[ ]**  | **[x]**  |
|  |  |  |
| **We sell groundwater to other public water systems.** | **[ ]**  | **[x]**  |
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1. **Routine, Repeat, and Triggered Source Sample Locations**

|  |  |  |
| --- | --- | --- |
| Location/Address for**Routine Sample Sites** | Location/Address for**Repeat Sample Sites** | Sources for**Triggered Sample Sites** |
| **X1. 1005 1st** |  | * 1. **1005 1st**
 |  | **S\_02** |
|  |  | * 1. **1001 1st**
 |  | **S\_\_\_** |
|  |  | * 1. **1010 1st**
 |  | **S\_\_\_** |
|  |  |  |  | **S\_\_\_** |
|  |  |  |  | **S\_\_\_** |
| **Y2. 5005 10th** |  | **2-1. 5005 10th** |  | **S\_01** |
|  |  | **2-2. 5001 10th**  |  | **S\_02** |
|  |  | **2-3. 5010 10th** |  | **S\_03** |
|  |  |  |  | **S\_\_\_** |
|  |  |  |  | **S\_\_\_** |
| **Y3. 1005 A** |  | **3-1. 1005 A** |  | **S\_01** |
|  |  | **3-2. 1001 A** |  | **S\_02\_** |
|  |  | **3-3. 1010 A** |  | **S\_03\_** |
|  |  |  |  | **S\_\_\_** |
|  |  |  |  | **S\_\_\_** |
| **Z4. 1005 D** |  | **4-1. 1005 D** |  | **S 01** |
|  | **4-2. 1001 D** |  | **S\_02** |
|  | **4-3. 1010 D** |  | **S\_03**  |
|  |  |  | **S\_\_\_** |
|  |  |  | **S\_\_\_** |

**Important notes for Sample Collector: Collect samples early in the month and early in the week! Think about vacations of key staff. Look at sample tap condition.**

1. **Reduced Triggered Source Monitoring Justification**

We will only sample S02 for routine sample site X1 because X1 is in Pressure Zone X. This pressure zone can only receive water from S02; the zone is too high in elevation to receive water from S01 or S03.

1. **Routine Sample Rotation Schedule**

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| --- | --- | --- | --- |
| **Month** | **Routine Site(s)** | **Month** | **Routine Site(s)** |
| January | 1 & 3 | July | 1 & 3 |
| February | 2 & 4 | August | 2 & 4 |
| March | 1 & 3 | September | 1 & 3 |
| April | 2 & 4 | October | 2 & 4 |
| May | 1 & 3 | November | 1 & 3 |
| June | 2 & 4 | December | 2 & 4 |

1. ***E. coli-*Present Sample Response Plan**

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| **Distribution System *E. coli* Response Checklist** |
| **Background Information** | **Yes** | **No** | **N/A** | **To Do List** |
| We inform staff members about activities within the distribution system that could affect water quality. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We document all water main breaks, construction & repair activities, low pressure and outage incidents. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We can easily access and review documentation on water main breaks, construction & repair activities, low pressure and outage incidents. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| Our Cross-Connection Control Program is up-to-date. | **[ ]**  | **[x]**  | **[ ]**  | **[x]**  |
| We test all cross-connection control devices annually, as required, with easy access to the proper documentation. | **[ ]**  | **[x]**  | **[ ]**  | **[x]**  |
| We routinely inspect all treatment facilities for proper operation. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have procedures in place for disinfecting and flushing the water system if it becomes necessary. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We can activate an emergency intertie with an adjacent water system in an emergency. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We have a map of our service area boundaries. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have consumers who may not have access to bottled or boiled water. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| There is a sufficient supply of bottled water immediately available to our customers who are unable to boil their water. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have identified the contact person at each day care, school, medical facility, food service, and other customers who may have difficulty responding to a Health Advisory. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have messages prepared and translated into different languages to ensure they will be understood by our consumers | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have the capacity to print and distribute the required number of notices in a short time period. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| **Policy Direction** | **Yes** | **No** | **N/A** | **To Do List** |
| We have discussed the issue of *E. coli*-present sample results with our policy makers. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| If we find *E. coli* in a routine distribution sample, the policy makers want to wait until repeat test results are available before issuing advice to water system customers. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| **(Cont.)** |

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| **Distribution System *E. coli* Response Checklist** |
| **Potential Public Notice Delivery Methods** | **Yes** | **No** | **N/A** | **To Do List** |
| It is feasible to deliver a notice going door-to-door. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have a list of all of our customers’ addresses. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have a list of customer telephone numbers or access to a Reverse 9-1-1 system. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have a list of customer email addresses. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We encourage our customers to remain in contact with us using social media. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We have an active website that we can quickly update to include important messages. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| Our customers drive by a single location where we could post an advisory and expect everyone to see it. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We need a news release to supplement our public notification process. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
|  |
| ***E. coli*-Present Triggered Source Sample Response Checklist –** **All Sources** |
| **Background Information** | **Yes** | **No** | **N/A** | **To Do List** |
| We review our sanitary survey results and respond to any recommendations affecting the microbial quality of our water supply. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We address any significant deficiencies identified by the sanitary survey. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| There are contaminant sources within our Wellhead ProtectionArea that could affect the microbial quality of our source water, andIf yes, we can eliminate them. | [ ] [ ]  | [x] **[ ]**  | [ ] [x]  | [ ] [ ]  |
| We routinely inspect our well site(s). | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have a good raw water sample tap installed at each source. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| After we complete work on a source, we disinfect the source, flush, and collect an investigative sample. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| **(Cont.)** |

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| ***E. coli*-Present Triggered Source Sample Response Checklist –** **All Sources** |
| **Public Notice** | **Yes** | **No** | **N/A** | **To Do List** |
| We discussed the requirement for immediate public notice of an *E. coli*-present source sample result with our water system’s governing body (board of directors or commissioners) and received direction from them on our response plan. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We discussed the requirement for immediate public notice of an *E. coli*-present source sample result with our wholesale customers and encouraged them to develop a response plan. | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We have prepared templates and a communications plan that will help us quickly distribute our messages. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
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| ***E. coli*-Present Triggered Source Sample Response Checklist – Source S01** |
| **Alternate Sources** | **Yes** | **No** | **N/A** | **To Do List** |
| We can stop using this source and still provide reliable water service to our customers. | **[x]**  | **[ ]**  | **[ ]**  | **[ ]**  |
| We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months). | **[ ]**  | **[ ]**  | **[x]**  | **[ ]**  |
| We can provide bottled water to all or part of our distribution system for an indefinite period. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We can quickly replace our existing source of supply with a more protected new source of supply. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| **Temporary Treatment** | **Yes** | **No** | **N/A** | **To Do List** |
| This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.If yes, at what concentration? \_\_\_ mg/L | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (Operational Storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |
| We can alter the demand for drinking water (Maximum Day or Peak Hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine. | **[ ]**  | **[x]**  | **[ ]**  | **[ ]**  |

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| ***E. coli-present* Triggered Source Sample Response Checklist –Source S02** |
| **Alternate Sources** | **Yes** | **No** | **N/A** | **To Do List** |
| We can stop using this source and still provide reliable water service to our customers. | [ ]  | [x]  | [ ]  | [ ]  |
| We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months). | [ ]  | [ ]  | [x]  | [ ]  |
| We can provide bottled water to all or part of our distribution system for an indefinite period. | [ ]  | [x]  | [ ]  | [ ]  |
| We can quickly replace our existing source of supply with a more protected new source of supply. | [ ]  | [x]  | [ ]  | [ ]  |
| **Temporary Treatment** | **Yes** | **No** | **N/A** | **To do List** |
| This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.If yes, at what concentration? 1.0 mg/L | [x]  | [ ]  | [ ]  | [ ]  |
| We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system. | [ ]  | [ ]  | [x]  | [ ]  |
| We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (Operational Storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6. | [ ]  | [ ]  | [x]  | [ ]  |
| We can alter the demand for drinking water (Maximum Day or Peak Hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine. | [ ]  | [ ]  | [x]  | [ ]  |

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| ***E. coli-present* Triggered Source Sample Response Checklist –****Source S03** |
| **Alternate Sources** | **Yes** | **No** | **N/A** | **To do List** |
| We can stop using this source and still provide reliable water service to our customers. | [x]  | [ ]  | [ ]  | [ ]  |
| We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months). | [ ]  | [ ]  | [x]  | [ ]  |
| We can provide bottled water to all or part of our distribution system for an indefinite period. | [ ]  | [x]  | [ ]  | [ ]  |
| We can quickly replace our existing source of supply with a more protected new source of supply. | [ ]  | [x]  | [ ]  | [ ]  |
| **Temporary Treatment** | **Yes** | **No** | **N/A** | **To do List** |
| This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.If yes, at what concentration? 0.2 mg/L | [x]  | [ ]  | [ ]  | [ ]  |
| We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system. | [ ]  | [ ]  | [x]  | [ ]  |
| We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (Operational Storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6. | [ ]  | [ ]  | [x]  | [ ]  |
| We can alter the demand for drinking water (Maximum Day or Peak Hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine. | [ ]  | [ ]  | [x]  | [ ]  |

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| **Distribution System *E. coli* Response Plan** |
| **If we have *E. coli* in our distribution system we will immediately:**1. Call DOH.
2. Collect repeat and triggered samples per Part D. Collect additional investigative samples as necessary.
3. Inspect our water system facilities, including treatment plants for proper operation.
4. Interview staff to determine whether anything unusual was happening in the water system service area, especially since the previous month’s sample(s).
5. Review new construction activities, water main breaks, and pressure outages that may have occurred during the previous month.
6. Review Cross-Connection Control Program status.
7. Discuss whether a Health Advisory is warranted based on the findings of steps 3-6. Issue advisory if necessary.
8. Await repeat sample results and respond appropriately:
	* Repeats all satisfactory. Lift HA, if one was issued.
	* Any repeat unsatisfactory: Issue HA if not already in place. Host DOH for a system inspection and respond appropriately to inspection findings.
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| ***E. coli*-Present Triggered Source Sample Response Plan****Source S01** |
| **If we have *E. coli* in our source water we will immediately:**1. Shut off S01.
2. Call DOH.
3. Distribute required notice, including conservation messages.
4. Begin water conservation measures.
5. Interview staff.
6. Keep S01 off-line until 4-log virus treatment is designed, approved by DOH, and installed.
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| ***E. coli*-Present Triggered Source Sample Response Plan****Source S02** |
| **If we have *E. coli* in our source water we will immediately :**1. Call DOH.
2. Increase free chlorine residual to 1 ppm before first customer.
3. Distribute required notice.
4. Interview staff.
5. Begin compliance monitoring per DOH directions.
6. Determine if long-term solution will be to keep the minimum residual at 1 ppm or if other modifications can be made to achieve CT 6 at a lower residual. If other modifications are possible, complete design, get DOH approval, and construct the changes.
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| ***E. coli*-Present Triggered Source Sample Response Plan****Source S03** |
| **If we have *E. coli* in our source water we will immediately:**1. Call DOH
2. Distribute required notice
3. Interview staff
4. Begin compliance monitoring per DOH directions.
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1. **System Map**

**XYZ Water Assoc. System**

Zone Y

TP001 / S01

(470 GPM)

Z4

Y2

Y3

X1

Cl2

TP002 / S02

(300 GPM)

700 L.F. of 8-inch Transmission Line

PRV

Zone X (upper zone)

X Tank (300,000 Gallons)

Cl2

Y, Z Tank

(600,000 Gallons)

Cl2

Zone Z

TP003 / S03

(250 GPM)

Spring