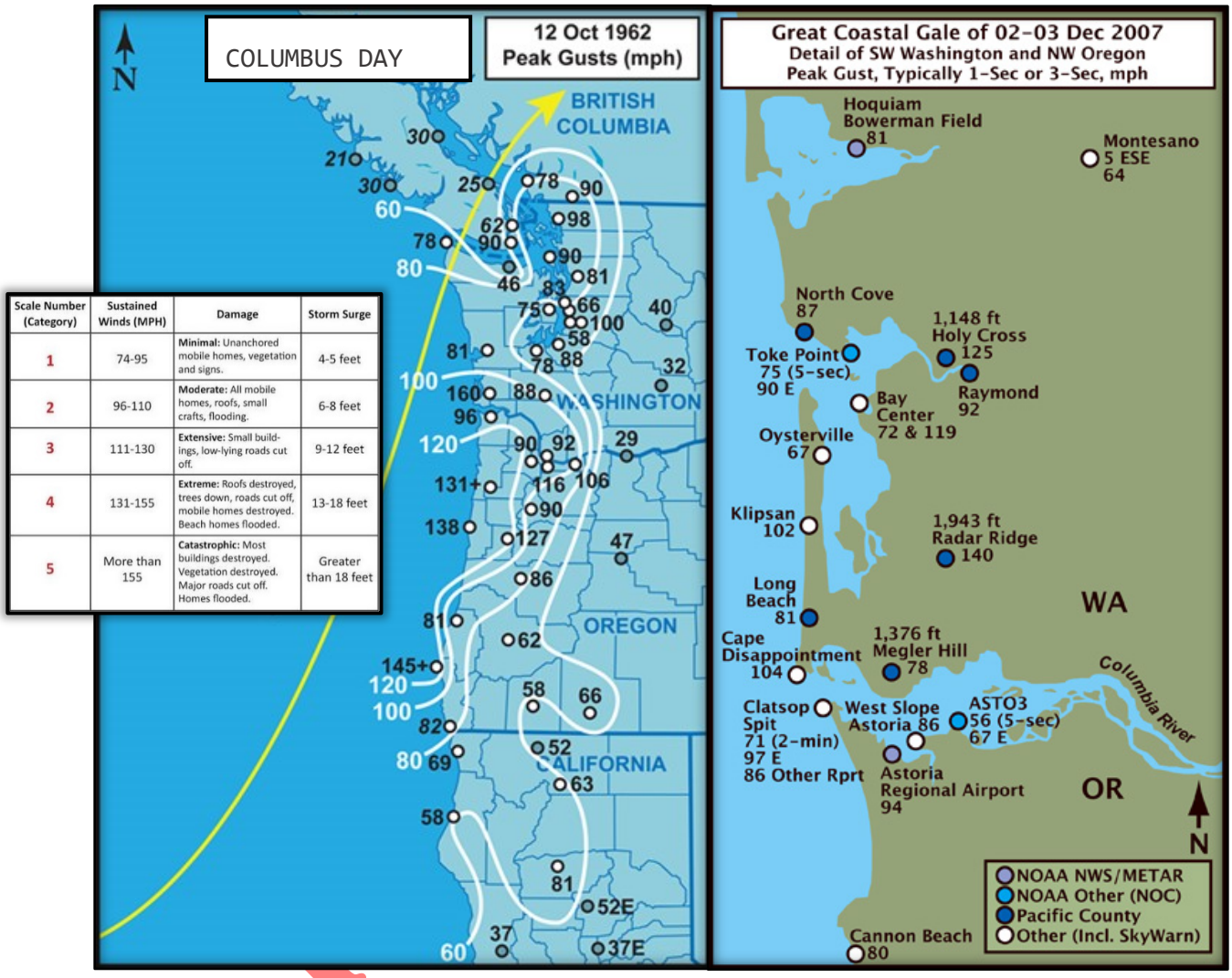
NORTH BEACH WATER DISTRICT



Scale Number (Category)	Sustained Winds (MPH)	Damage	Storm Surge
1	74-95	**Minimal:** Unanchored mobile homes, vegetation and signs.	4-5 feet
2	96-110	**Moderate:** All mobile homes, roofs, small crafts, flooding.	6-8 feet
3	111-130	**Extensive:** Small buildings, low-lying roads cut off.	9-12 feet
4	131-155	**Extreme:** Roofs destroyed, trees down, roads cut off, mobile homes destroyed. Beach homes flooded.	13-18 feet
5	More than 155	**Catastrophic:** Most buildings destroyed. Vegetation destroyed. Major roads cut off. Homes flooded.	Greater than 18 feet

Emergency Response Plan

PUBLIC WATER SYSTEM ID #: 63000Y

Date: August 20, 2016

1 - System Contact Information

System Name	North Beach Water District
PWS ID#	63000C
System Phone Number	360-665-4144
Communities Served	Ocean Park, WA 98640 – Nahcotta, WA 98637
Population Served	4,900
Number of Connections	2,690
Water System Operator	William Neal
Address	PO Box 38 Nahcotta, WA 98640 / 1200 202nd Lane (Home)
Home Phone	(360) 665-3290
Cell Phone	(360) 244-0068
e-mail address	bneal@northbeachwater.com
Field Supervisor	Robert Hunt
Address	
Home Phone	360.244.3385
Cell Phone	360.244.0046
e-mail address	rhunt@northbeachwater.com
Treatment Plant Operator	Dennis Schweizer
Address	122 28th Street NW Long Beach WA 98630
Home Phone	360.214.2810
Cell Phone	360.244.0047
e-mail address	dschweizer@northbeachwater.com

Commissioner Position #1	Brian Sheldon
Address	
Home Phone	360.665.2804
Cell Phone	360.244.9696
e-mail address	oysters@willapabay.org
Commissioner Position #2	Gwen Brake
Address	
Home Phone	360.665.2784
Cell Phone	
e-mail address	webcom@centurytel.net
Commissioner Position #3	Glenn Ripley
Address	
Home Phone	360.665.2843
Cell Phone	503.730.3404
e-mail address	water@myspclstitches.com

A) Emergency Contact Information

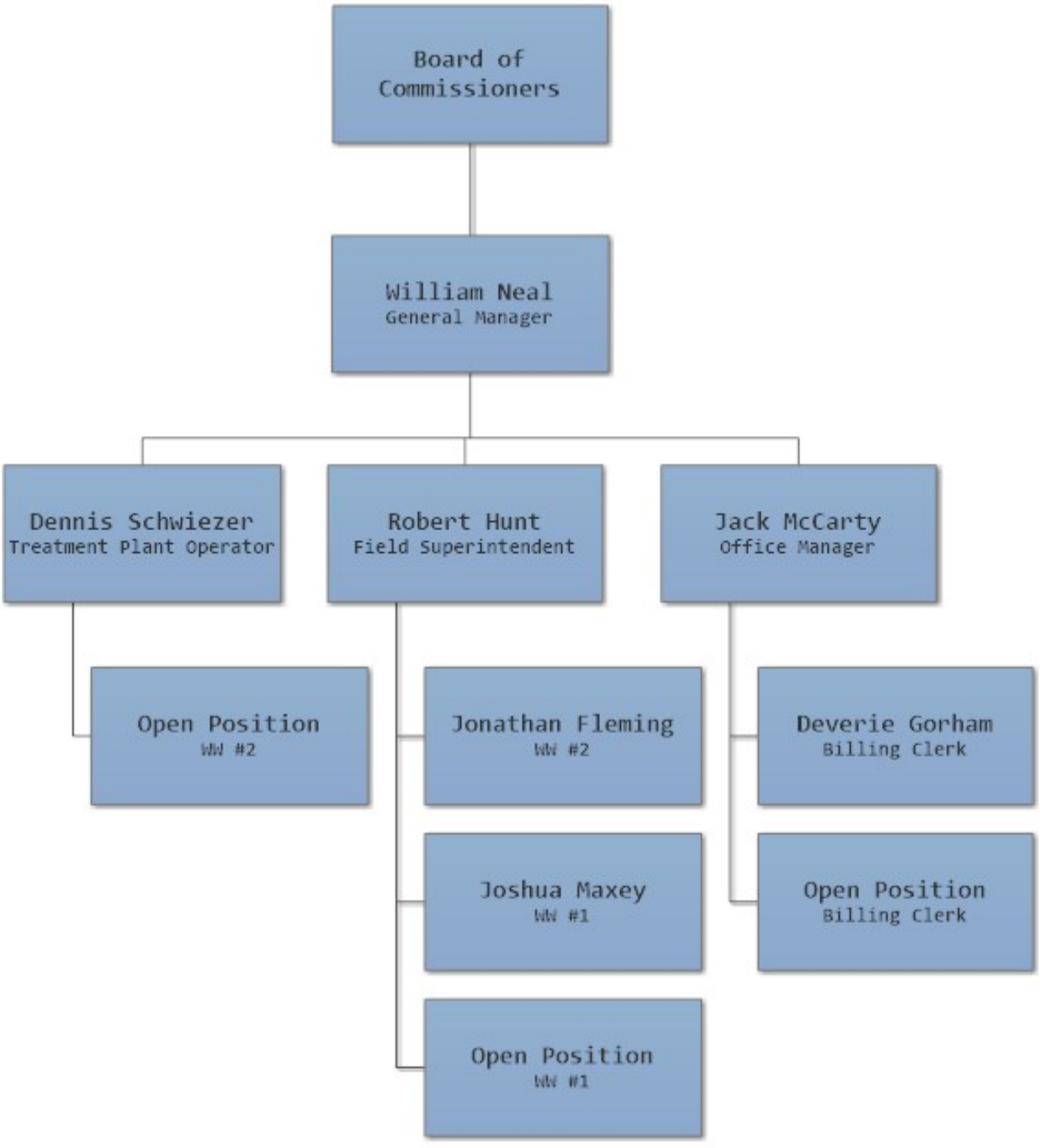
Emergency Contact	Bill Neal	Robert Hunt	Dennis Schweizer
Daytime Phone	(360) 665-4144	(360) 665-4144	(360) 665-4144
Evening Phone	(360) 665-3290	(360) 244-3385	(360) 244-0047
Cell Phone	(360) 244-0068	(360) 244-0046	(360) 244-0047

B) Person(s) Responsible for Developing and Maintaining ERP

Employee Completing Plan	William Neal
Title	General Manager
Phone Number	(360) 665-4144
Consultant	N/A
Phone Number	N/A
Date of Plan	August 20,2016

2 - Chain of Command

This chart identifies **who is responsible** for making decisions during an emergency.



This will enable continuity of operations to flow smoothly and strengthen resilience. Keep this current and include titles, day and night telephone numbers, cellular phone and email addresses.

General Manager: ---------- William “Bill” Neal

Home Phone: ---------- 360.665.3290

Cell Phone: ---------- 360.244.0068

Duties: ---------- Incident Manager

---------- Media Contact

---------- Information/Liaison

Office Manager: ---------- Jack McCarty

Home Phone: ----------

Cell Phone: ----------

Duties: ----------

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3 - Emergency External Contact List

Name	Contact
Southwest Reginal Office of Drinking Water	360.236.3030 360.236.3032 24 hr. 877.481.4901
Dept of Ecology State of Washington	360.407.6300
Sandy Brentlinger Coliform Water Quality Monitoring Program Coliform: sampling results, requirements, & compliance Coliform and E.coli technical assistance Boil water/health advisories Total coliform rule Groundwater Rule	360.236.3044
Sophia Petro Chemical Water Quality Monitoring Program Susceptibility assessment	360.23.63046

Nitrate, arsenic, inorganic chemicals Volatile organic chemicals, synthetic organic chemicals Radionuclides, asbestos, and lead & copper Pesticide vulnerability determinations, and waivers for organic and inorganic chemical monitoring Water Quality Monitoring Schedules Consumer Confidence Reports Groundwater under the influence	
Wafa Tafesh Technical Program Advisor Water Facility Inventory Groundwater disinfection tracking & monthly reporting	360.236.3026
Regina Grimm, P.E. Specialty: Disinfection By-Products Clark, Grays Harbor, and Mason Counties	360.236.3035
Local Notification List	**Contact**
General Manager William “Bill” Neal	360.665.3290 360.244.0068
Responsible Operator in Charge Robert Hunt	360.244.3385 360.244.0046
Treatment Plant Operator Dennis Schweizer	360.214.2810 360.244.0047
Commissioner Position #1 Brian Sheldon	360.665.2804 360.244.9696
Commissioner Position #2	360.665.2784

Gwen Brake	
Commissioner Position #3 Glenn Ripley	360.665.2843 503.730.3404
Utility Locate	811 Or 800.424.5555
Ambulance service	911
Fire department	911
Ocean Beach Hospital (Ilwaco)	360.642.3181
Columbia Memorial Hospital (Astoria)	503.325.4321
Local Emergency Management	360.642.9340
Pacific County Sheriff's Department	360.642.9403 Night 360.642.9397
City of Long Beach	360-642-4421
Pacific County Department of Environmental Health	360.642.9343 360.642.9349 Night 360.642.9397
Local Media Chinook Observer Radio Station KLMY 99.7 FM Radio Station KMUN 91.9 & KCPB 90.9 FM Radio Station KAST 1370 AM	 360-642-8181 800-643-3703 503-861-6620 503-325-0010 503-861-6620
Neighboring Water System Surfside Homeowners Association Oysterville Water Company	360-665-4147 Night 360-665-4147 360.665.5521 Night (N/A)

City of Long Beach	360.642.4421 Night 360.642.4421
City of Ilwaco	360.777.8330 Night 360.777.8330
Water testing laboratory(s) ALS Global 1317 South 13 Avenue Kelso, WA 98626	360.577.7222 Night 360.501.3342 Emergency: Jacky 360.975.4165 Mary 360.430.7119
BSK Vancouver Analytical Laboratory 2517 East Evergreen BLVD Vancouver, WA 98661 Water Pick-up Location: Ace Hardware 600 Triangle Mall Longview, WA 98632	360.750.0055 Emergency: Renea Rangell Ace Hardware: 360.501.6001
Pacific County	360.875.9356 Emergency: Megan McNelly 360.589.3598
Water Management Lab	253.531.3121
Service and Repair	Contact
Charter Communication	800.314.7195
Century Link	855.891.4080 Acct # 300 541 552 Password: seashore

Ford Electric	360.642.2137 John 360.244.1373
Wadsworth Electric	503.325.5501
Taft Plumbing	360.665.4775
Belk’s Plumbing	360.783.2951
Pump Tech	360.659.6230
DPR Excavating	360.665.4225 360.783.2052
Hill & Son	360.665.4447 360.783.2294 360.783.2290
Woody’s Excavating	360.642.4459
Pacific County Public Utility #2	360.642.3191 Night 877.602.6465
Equipment Rental Clatsop Power United Rentals	 503-325-0792 360-425-2350

4 - Events that Cause Public Water Systems Emergencies

Regardless of the event that results in an emergency the following actions will be taken by the District with some variations dependent on the situation:

1. Confirm and determine the type and severity of the emergency.
2. Take immediate actions to protect lives, reduce injuries, protect property, and ensure safety.
3. Collaborate with State and local health officials and others when making Public Health Notifications. Follow all state and local rules and regulations and prioritize notification of vulnerable customers.
4. Make repairs based on priority demand.
5. Return the system to normal operation.

Types of Incidents:

A. Loss of System Pressure (below 20 psi)

Emergency Concern:

Cross connection contamination due to back flow from back siphonage or back pressure or direct contamination from open pipe.

B. Revised Total Coliform Rule

Emergency Concern:

Coliform bacteria are unlikely to cause illness. However, their presence in drinking water indicates that disease-causing organisms (pathogens), i.e. legionella, enteroviruses, could be present in the water system. **E. coli** is a type of fecal coliform bacteria commonly found in the intestines of animals and humans. E. coli is short for Escherichia coli. There are many types of E. coli. Most of them are harmless. Although some can cause serious health complications and death. Some of the serious health complications are: bloody diarrhea, severe anemia, and, kidney failure. Other strains of E. coli can cause urinary tract infections or other infections.

Treatment Technique Trigger:

a. **Level 1 Assessment**[1]**:** two or more total coliform-positive samples in one calendar month. Failure to collect three repeat samples for every total coliform positive routine sample.

b. **Level 2 Assessment**[2]**:** E.coli MCL violation, 2 level 1 treatment technique trigger within a rolling 12 month period.

c. **Groundwater Rule (GWR)**: Collect one sample from each well in operation at the time the coliform or E. coli bacteria positive sample was collected. Have the sample analyzed for E. coli bacteria by a certified laboratory.

A treatment technique trigger could occur any time we collect routine and repeat samples. We must be ready to start a system evaluation as soon as the lab notifies us of positive results that trigger an assessment requirement. Therefore, we will collect samples early in the month, so we have ample time to complete the assessment and repeat sampling before collecting samples the following month. **We will not wait for written notification of the need for an assessment.**

Sanitary Defect / Defect:

[1] See appendix Number-
[2] See appendix Number-

The ODW distinguishes between “sanitary defects” and “defects.” Either might result in a positive coliform sample that triggers the assessment requirement. The assessment includes taking or identifying corrective actions to fix sanitary defects and recommendations for responding to defects.

A sanitary defect is a pathway for contaminants to enter the water system or failure or imminent failure of an existing barrier. A sanitary defect may be as simple as a missing reservoir vent screen or a poorly sealed reservoir hatch, or as substantial as a failing reservoir.

Corrective action for a sanitary defect could be as simple as installing a new screen on a reservoir vent or replacing the seal on a reservoir hatch, or as substantial as building a new water tank or installing new water pipe.

Defects are issues identified during an assessment that could have caused positive coliform samples. A defect might be as simple as an improper sampling technique, such as rinsing out a bottle before collecting a sample.

Corrective action for a defect might be as simple as training on correct sampling techniques for the person who collects water samples. ODW won’t enforce correction of defects but, if uncorrected, they may trigger additional assessments, or require a system that doesn’t disinfect to begin providing disinfection.

If the District is unable to correct a sanitary defect before the 30-day deadline, the District will submit an assessment with a Corrective Action Plan to the ODW for review and approval. The District’s Corrective Action Plan will, at a minimum, describe the uncorrected sanitary defect and the District’s timeline for correcting it. Due to the existing sanitary defect or defect the ODW may require the District to install disinfection as an interim corrective measure.

Public Notification Requirements

Tier 1 E. coli MCL violation – Issued within 24 hours:

- District has a routine total coliform bacteria positive sample and one of the repeat samples is E. coli bacteria positive.
- District has a routine E. coli positive sample and one of the repeat samples is E. coli or total coliform bacteria positive.
- District has a routine E. coli-positive and fails to collect all required repeat samples.
- District has a repeat total coliform positive sample and fails to test the sample for E. coli.

Tier 2 Treatment Technique Violation – Issued within 30 days:

- District fails to conduct an assessment within 30 days of the treatment technique trigger.
- District fails to correct a sanitary defect within ODW required timeframe.

Tier 3 Monitoring Violation – Issued within one year:

- District fails to collect all required routine samples.
- District fails to have a routine total coliform positive sample tested for E. coli.

Tier 3 Reporting Violation – Issued within one year:

- District fails to submit a monitoring report or completed assessment from to the ODW in a timely manner.
- District fails to notify ODW of an E. coli positive sample in a timely manner.

C. Disinfection Byproducts MCL Violation

Emergency Concern:

According to the Washington State Department of Health[3], scientists have conducted studies on health effects of exposure to high levels of DBPs on laboratory animals. These studies have shown that several DBPs cause cancer in laboratory animals. In addition, some DBPs cause undesirable effects in the animals' growth and reproduction. It is, however, difficult to estimate how the results of these high dosage studies on laboratory animals can be applied to low dosage, long-term exposure for humans.

Scientists have also studied the relationship between drinking chlorinated water and cancer rates. Some of these studies suggest an increased cancer risk to those using chlorinated drinking water, while others found no increased risk. Other studies that investigate whether chlorinated drinking water has an effect on reproduction and development also show inconsistent results. At the present time, the U.S. Environmental Protection Agency (EPA) does not believe there is enough evidence to state conclusively that DBPs cause these types of health effects. Research on the health effects of DBPs is not complete and the federal government continues funding research on this topic.

D. Disinfectant Residual MCL Violation

Emergency Concern:

Chlorine in concentrations above the MCL (4 mg/L) can cause irritating effects to eyes, nose, and stomach discomfort or anemia.

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[3] http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/DisinfectionByproducts

E. Inorganic Compound MCL Violation

Emergency Concern:

Arsenic: Some people who drink water containing arsenic in excess of the MCL (10 Ug/L) over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer. Health effects might include: Thickening and discoloration of the skin, stomach pain, nausea, vomiting, diarrhea, and liver effects; cardiovascular, pulmonary, immunological, neurological (e.g., numbness and partial paralysis), reproductive, and endocrine (e.g., diabetes) effects; cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate.

Asbestos: Some people who drink water containing asbestos well in excess of the MCL (7 MFL) for many years may have an increased risk of developing benign intestinal polyps.

Copper: Some people who drink water containing copper in excess of the action level (1.3 mg/L) may, with short term exposure, experience gastrointestinal distress, and with long-term exposure may experience liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level.

Lead: Infants and children, delays in physical or mental development; children could show slight deficits in attention span and learning abilities. Adults, kidney problems; high blood pressure.

F. Radionuclides MCL Violation

G. Volatile Organic Compound MCL Violation

H. Synthetic Organic Compound MCL Violation

I. Equipment Failure

J. Vandalism/Terrorist Attack

K. Chemical Spills

5 - Procedure for Shock Chlorination of Water Wells

Shock chlorination is a disinfection treatment recommended when a drinking water system well(s) has been contaminated with total coliform or E. coli bacteria. The presence of bacteria in a well is usually caused by the intrusion of contaminated water. Intrusion of contaminated water in a well can be attributed to the following conditions:

- Defective or damaged well casing.
- Defective or damaged well seal or cap.
- Defective, damaged, or, improperly installed pitless adapter.
- Defective or damaged casing or surface seal.
- Casing that terminates too close to grade

If any of these situations exist, they must be resolved before shock chlorination proceeds. The well(s) should be taken offline until the condition is remedied and the well(s) have been shock chlorinated and satisfactory bacteria samples have been obtained.

Frequently, bacteria can be introduced during the well drilling process, installation of or replacement of the well pump and/or appurtenances.

Shock Disinfection of Well – AWWA Standard C654-13

Disinfection of wells requires high levels of disinfectant to be applied to ensure bacteria and other potential pathogens are inactivated. It should be noted that pH and temperature are two important factors affecting the disinfection process.

Sanitary conditions are necessary for effective well disinfection. During construction and maintenance operations, precautions shall be taken to minimize contamination. Surface runoff shall be diverted away from the well. Pump, pump column, and any other items and materials that will be inserted in the well shall be used and stored in a manner that minimizes contamination.

PREPARATION:

Isolate the well from the system.

Determine the correct amount of Sterilene[4] (Jet Lube®). Determine the diameter of the well. Determine the total feet of water in the well. Use the following formula to determine the amount treatment water required.

(gal/ft x 2) x (feet of water in well)= amount of treatment water required.

Example:

[4] JET-LUBE STERILENE is sodium based, granular chlorine that does not require a control of pH using vinegar or acid to make it effective. JET-LUBE STERILENE is far more effective than any other standard chlorine. JETLUBE STERILENE is NSF 60 Certified. JET-LUBE STERILENE is non-oxidative which means, it will not cause corrosion, there are no corrosive fumes during usage and it will not oxidize soluble minerals in water, causing discoloration. Using JET-LUBE STERILENE will not cause obtrusive, chlorine odors.

8” well with 100 feet of water (2.6 gal/ft x 2) x (100 ft/H20) = 520 gallons H20.

Dose to reach 100 mg/L use 0.0015 lbs./gal

Example 520 gallons of water (520 X 0.0015) = 0.78 lbs. of Sterilene.

Put 520 gallons of potable water in a clean disinfected container (minimum 600 gallon capacity). Connect a circulating pump (centrifugal pump) to the tank for mixing. Pour the Sterilene into the tank while circulating the treatment water

Application:

Inject treatment water into the well through a tremie pipe that terminates near the top of the pump. Pump the well to waste until you have a chlorine residual. If the residual is below 50 mg/l total chlorine, repeat the above described well chlorination process. When a minimum residual of 50 mg/L of total chlorine is achieved, let the well set for a minimum of 6 hours but not more than 24 hours.

Pump the well dechlorinating the water before releasing it to the environment.

Testing:

When the chlorine is below .2 mg/l, grab two sets of two samples 15 minutes apart. Transport the samples to a certified laboratory for analysis within 12 hours. Two of the sample will be tested using the Total Coliforms Most Probable Number (MPN) method and two of the samples will be tested using the Heterotrophic Plate Counts (HPC) method.

L. Personnel Safety

A. Evacuation Plan

The **evacuation plan** for this facility is located:

The evacuation leader is (name):

The **assembly area** is (location):

The designated **safety officer** is (name):

The written **safety and health plan** is located:

The **MSDS** book is located:

Other safety plan **documents** are located:

B. First Aid

The first-aid **kit** for this facility is located:

Our first-aid/CPR **trained personnel** are (names):

C. Personal Protective Equipment

Emergency response PPE for this facility includes:

PPE is located:

M. G. Alternate Water Sources

A severe emergency may mean you need to find another source for water for your consumers. All public water systems should plan ahead how they will provide alternate safe water during an emergency. A contingency plan may include bottled water, bulk water hauled, emergency connections opened, emergency backup well, mutual aid or other suppliers. Take time to determine how long it will take to get this alternate source to the consumer. Alternative sources must be approved by the Drinking Water Program.

Alternate Source:

Emergency Connection is: none

Second Emergency Connection: none

Emergency Bulk Water Hauler:

Bottled Water Supplier: Columbia Dist.
503-274-9990 Portland, OR
888-417-5001 Astoria, OR
360-694-8309 Vancouver, WA

Costco
503-338-4103
Order online at Costco.com for delivery

N. Property Protection

Property Protection and Security:

Our procedure for “lock down” or access control:

The person responsible for establishing a security perimeter during an event is (name):

Our procedure for evidence protection (if the event is a crime) is:

Other property protection procedures and measures in place are:

O. I. Water Sampling and Monitoring

D. Standard Treatment and Monitoring - Plans

Our sample site location is:

The person responsible for routine sampling is:

Our emergency sample collection kit is located:

E. Standard Treatment and Monitoring – Testing/Analysis

(Attach Annual Required Test List)

Analysis	Frequency	Laboratory	Contact Person	Phone

F. Emergency Laboratory Contact List

Analysis:	Laboratory	Physical Address	Contact Person	Phone
Pathogens				
Chemical				
Radiological				
Chemical Warfare or WMD Agents				

P. Plan Revisions, Evaluation and Exercises

Plan Revision History:

Change Number:

Subject/Description of Change Date Entered by:

Plan Evaluation History:

Date:

Description of Evaluation Activities:

Participants:

Plan Exercise and Training Records:

Date:

Description of Exercise or Training Event:

Participants:

Q. Plan Appendix Documents

Additional Documents Attached:

Emergency Bulk Water Hauling

G.

Water System MAPS