

ISLAND COUNTY
DEPARTMENT OF EMERGENCY MANAGEMENT

SUPPLEMENT 1
to
Emergency Support Function (ESF)
Section 11, TAB A, Food and Water

TABLE OF CONTENTS

ACKNOWLEDGMENT	1
EXECUTIVE SUMMARY	2
SECTION 1 – PLAN DEVELOPMENT	3
Purpose	3
Inventory of Water Systems	3
Education	3
Cooperation	3
Certified Water Operators	4
Logistics	4
Water Treatment	4
Equipment	5
Distribution	5
SECTION 2 – SPECIFICATIONS	6
Water System Inventory	6
Purchase and Stockpile Assets	6
Distribution of Containers	6
Verification of Chlorine Dosage	6
Fill Containers and Distribution	6
Priority Fueling	6
Reimbursement for Providers	7
Paying for Distributed Water	7
Tracking and Testing Water Moved	7
Filling and Distributing Water Containers	7
Operational Status Inventory	7
Equipment Procurement	7
Data Collection	8
Proposed List of Assets	9
SECTION 3 – POST EMERGENCY DECLARATION ACTION ITEMS	10
Action 1: Appoint Potable Water Coordinator	10
Action 2: Inventory of Operable Water Systems	10
Action 3: Review of Pre Staged Assets	10
Action 4: Identify Manpower and Vehicles	10
Action 5: Distribution of Instructions	11
Action 6: Deploy Assets	11
Action 7: Disinfect and Fill Containers	11
Action 8: Load and Distribute Containers	11
Action 9: Fueling	12
Appendix A	13
Appendix B	13
Appendix C	14
Appendix D	15
Appendix E	17
Appendix F	18

ACKNOWLEDGMENT

Island County Board of Commissioners
Island County General Services Department
Island County Department of Emergency Management
Island County Department of Public Health
Island County Department of Public Works
Water Resources Advisory Committee
Washington State Department of Ecology
Washington State Department of Health
City of Oak Harbor
City of Coupeville
City of Langley
Whidbey Island Water Systems Association
United States Navy
American Red Cross
Stanwood Camano Fire and Rescue
North Whidbey Fire and Rescue
South Whidbey Fire and Rescue
Admirals Cove Water System
Port of Coupeville

In addition to the gratitude of the public agencies listed above, a special acknowledgment goes to Dean Thiem, member of the Water Resources Advisory Committee, and the operator/manager of the Penn Cove Water and Sewer District. Dean drove the concept of this project through the planning stages. Without his vision, this plan would not be in place.

EXECUTIVE SUMMARY

Because of the power outages during late 2006 through early 2007, most residents of Island County are amply aware of being without power and water for an extended period of time. Most were without power for less than a week each time. This can be long enough to appreciate how important water is for their everyday activities.

Island County has over 800 water systems, with approximately 160 on Camano Island and 640 on Whidbey Island. Inventory forms were sent to over 300 Group A (15 service connections or more) water systems within Island County. Approximately 100 responses were received. The results of that inventory showed that very few systems have emergency power that will allow them to produce water during power outages.

What if there is a major natural disaster and we are on our own for two to three weeks? Under the worst case scenario, the bridge will not be available and ferries may not be available for weeks. Without pre staged assets, a long time may pass between the need for the assets and them arriving on the island. This document provides a plan and recommendations for distributing potable water to citizens within Island County in emergency situations. The key issues in maintaining an emergency water supply are the following:

- Knowing which water systems have emergency power
- Education for the public; they must store emergency drinking water in their homes
- Neighboring water systems should have agreements for cooperation
- The most efficient way of transporting water from the well site to the main distribution points are with 200 to 300 gallon bladders on large pickups trucks. From the main distribution points 2½ and 5 gallon containers would be used for transporting water to homes. The smaller containers could be transported by car or bus.
- Dry chlorine should be stored at distribution points for treatment
- Diesel and propane for emergency power generators at the wells should be available under the category of priority fueling

This plan supplements the Island County Emergency Management Plan, ESF 11, Tab A, Food and Water. This plan provides an inventory of certified water operators and system in the county. These documents can be found in Appendix A and Appendix B.

The Island County Emergency Management Plan V, 1b (2) allows the County to “commandeer” for public use.

SECTION 1 – PLAN DEVELOPMENT

Purpose

This document provides a plan for the production and movement of potable water from available sources to those in need within Island County during emergencies. It was completed with the cooperation and oversight of the Island County Health Officer, Department of Health, Department of Emergency Management (DEM) and the Water Resources Advisory Committee. This plan supplements Emergency Support Function (ESF) 11 of the Island County Comprehensive Emergency Management Plan and is meant to provide the DEM with ideas, options and plans for implementation.

ESF 11 states that the minimum daily water requirement for basic survival is 3 gallons per day. The Red Cross and FEMA state that the minimum water requirement for basic survival is 1 gallon per day. The basic premise of this plan is to fill the gap between initial damage assessment (3-4 days) and the recovery effort (30-45 days). As the recovery effort begins, systems should be making their own plans for repair. The estimated population of Island County is 80,000. Using the Island County estimate of 3 gallons of water per person per day for basic survival, the maximum water needed for basic survival is 240,000 gallons. Using the estimate of 1 gallon per day for basic survival, the maximum water need for basic survival is 80,000 per day. Using the assumption that approximately 50% of the population will either have water available from other sources or will not be on the islands, we can assume that the maximum daily requirement of water moved around the county will be between 120,000 gallons and 40,000 gallons per day.

Inventory of Water Systems

An inventory of Group A water systems was completed in August 2007 with a response rate of approximately 30%. This inventory lists larger (Group A) water systems and pertinent information that will allow Emergency services to contact system operators and assess the possibility of them having excess potable water that would be available for distribution. The limiting factor for water availability on the islands will probably be emergency power. Few systems have emergency power on site that will allow them to produce water. The inventory showed most generators are not wired to run the well pumps.

Education

Island County in association with the Red Cross should sponsor emergency planning workshops and forums for our citizens. The public needs to know how long it will take assistance to arrive and how long they must be self-sufficient. The water purveyors will also need education and leadership. They must be encouraged to work together in emergency planning and preparedness. The Water Resources Advisory Committee, the Whidbey Island Water Systems Association and the Camano Water Systems Association could be used as lead agencies in this effort.

Cooperation

Neighboring water systems should be encouraged to have agreements in place to assist each other. They should be encouraged to be self-reliant and join with neighboring systems in cross training and asset sharing.

Certified Water Operators

The Island County DEM should maintain an up to date list of water operators who could be called on to assist in ensuring that any water we distribute is safe for human consumption. A list of certified water operators is included in Appendix A.

Logistics

Potable water is very expensive to transport over any distance. After Hurricane Katrina in 2005, FEMA estimated that it cost up to \$4 per gallon to transport potable water to the area of the disaster. If the bridges are down or unusable, semi trucks using the ferries are the only other viable option for moving potable water to the Islands.

Using the Island County estimate of 3 gallons of water per day per person, and assuming that a truck and trailer could carry 5,000 gallons of water, that would equate to 24 water trucks per day. Using the Red Cross estimate of 1 gallon of water per person per day, and assuming that a truck and trailer could carry 5,000 gallons of water, that would equate to 8 water trucks per day. Ferry space for supplies to enter the County, under this circumstance, will be limited.

If we can streamline the logistics chain by providing potable water locally, more room will be available for other high priority supplies. With the large number of water systems that we have in Island County, a more economical approach will be to stock enough equipment and supplies to be self-sufficient. After an incident that requires this plan to be implemented, it will be necessary to provide the means to move potable water within the County. Many possibilities have been discussed, including the following.

Utilizing fire trucks were discussed and ruled out because many of the fire trucks have been used for non-potable water and chemicals during their service life. Desalinization plants were discussed but deemed not feasible due to cost, the large power requirements, and small output. It was determined that utilizing water from the large number of ground water systems in Island County is the most feasible and workable solution. To ensure access to the groundwater during an emergency, stockpiling the appropriate equipment in Island County and making it available for use during emergencies will be essential.

The equipment should include potable water bladders, manifolds and hoses to fill water containers and small containers. Moving water within the county could be done a number of ways. Small bladders (200 to 300 gallons) would be the least expensive and most flexible approach in the long run. Small containers (2½ gallon or 5 gallon) would be the easiest and most flexible initial short-term solution. Refer to plan section on equipment (page 5) for additional details.

Water Treatment

Water treatment options were discussed during plan development. Liquid chlorine works well but has a very limited shelf life. It deteriorates rapidly and loses strength. Dry chlorine, either tablet or powder has a very long shelf life and handles long-term storage with little loss in strength.

Chlorine must be available and procedures need to be in place to ensure any water distribute by Island County is safe and free from bacterial contamination. Procedures need to be in place to chlorinate any water that is to be distributed, unless the producer treats the water at an adequate

level and that level is verified prior to distribution. Refer to Appendix E for chlorination instructions.

Equipment

The most cost effective and flexible long-term way to move potable water after the initial one to two weeks around the County is through the use of specially manufactured bladders. Several companies produce these bladders specifically for potable water. The most convenient size bladder would be the 200 to 300 gallon size. They are small enough to be carried in larger pickups and would not permanently tie up vehicles. They could be removed when empty so the truck could be used for other purposes. They are very flexible, durable, and store well for long periods of time in dry storage. They cannot be moved from the transport vehicle when they have water in them and must be securely tied down during transport.

Potable water containers in 2½ to 5 gallon sizes must be stocked. They could be distributed with the trucks carrying the bladders or filled independently and sent to distribution points for further distribution to our citizens. These containers when filled could be moved around the island on trucks, school buses, transit busses, etc.

These pre staged assets need to be controlled and kept in dry storage. They will need occasional inspection and periodic replacement. Once people in the county have the smaller containers, they could bring them to distribution points and refill them from the larger bladders. Assuming that the population of Island County is 80,000, and assuming that 60,000 are on Whidbey Island and 20,000 are on Camano Island, 25% of the total pre staged assets should be staged on Camano Island and 75% of the pre staged assets should be staged on Whidbey Island. Of the assets staged on Whidbey Island, 60% should be staged on North Whidbey with the remainder staged on South Whidbey.

Distribution

Once potable water is available for distribution, distribution points will need to be set up and our citizens will need to be notified. Island County Department of Emergency Management and the Red Cross will set up the distribution points. It is recommended that these locations should be specified in the near future.

SECTION 2 – SPECIFICATIONS

Water System Inventory

The Island County Department of Emergency Services, with the support of Island County Public Health, must create and update a database of water systems and their capabilities. After the initial survey and verification of the information, they must frequently update the information from water systems for currency and accuracy. This update should be done on a yearly basis. Certified water operators are critical to the overall plan and the health of our citizens. Island County will very likely need to have a certified water operator or employee from the Health Department knowledgeable of potable water procedures available to Emergency Management to ensure that the appropriate rules are followed and only safe drinking water is distributed. This list of operators would also provide a pool of talent to be used to assist in ensuring that adequate supplies of potable water are available for distribution.

Purchase and Stockpile Assets

Island County must purchase and stockpile a number of assets and have them available on the islands for use. Under the worst-case scenario, the bridge and ferries may not be available for weeks. Without pre staged assets, a long time may pass between the need for the assets and them arriving on the island. A list of proposed assets can be found in Table A and Table B in this section.

Distribution of Containers

Potable water containers can only be considered capable of distributing potable water in if they are under the direct control of the water operator or Island County. Once containers are released from their custody, the operator has to assume that they are contaminated and cannot be taken back for refilling and distributed to another person. The person in possession for their own use can refill them. It is recommended that at least three pre-staged sites be set up in North Whidbey, South Whidbey and Camano.

Verification of Chlorine Dosage

A lab certified to perform coliform and e-coil testing is not available on the Island. A method of performing presumptive testing may need to be investigated as a back up.

Fill Containers and Distribution

Pre selected distribution sites are recommended. These pre-selected sites should be well known locations such as fire stations, churches, etc. Island County Department of Emergency Management in association with the Navy and the American Red Cross have plans in place to identify evacuation centers, relief centers and distribution centers.

Using 250 gallon bladders, it would take 160 fillings per day to distribute 40,000 gallons per day. That would equate to 40 bladders being transported around the Island and each one being refilled four times each day. The number of bladders could be reduced if smaller containers (5 gallon) were also filled.

Priority Fueling

Most of the medium-sized water distribution systems that have emergency power generators use propane for fuel. The County, if it needs to use these sources, will have to ensure that available propane supplies are made available to these producers. Large

water systems such as Coupeville and Oak Harbor have diesel generators. Available diesel supplies will have to be managed to ensure that fuel deliveries are made to these water producers to ensure a continuous supply of water is available for distribution.

Reimbursement for Providers

A system needs to be put in place to reimburse purveyors providing water for distribution. These purveyors will be expending much time, effort and money to keep their systems operational. Island County, as the lead agency and legal authority during emergency events, has the authority to seize assets. These assets could include water for distribution throughout the Island. If Island County were to seize drinking water, then the water purveyor would document their actual expenses, by providing the water and presenting an invoice to the County for payment. Island County could add that total to any reimbursement sought from the State or Federal government.

Paying for Distributed Water

Having our citizens' pay for water during catastrophic events has been discussed. During a major disaster, banking and credit card machines may not be operational. The average citizen does not carry much cash or keep much cash on hand. Setting up pay stations, attended or coin operated may be an option but problems exist with security, manpower, electrical power to run the pay stations, and contamination. Therefore, paying upfront for distributed water was determined not to be a feasible solution.

Tracking and Testing Water Moved

It is important that any and all water that is moved during an emergency is tracked. This will allow the County and the health officials to know how much water is moved from a system to a distribution point and allow the health officials to know the source of the water in the event of health concerns. Refer to Appendix F for water tracking form.

Filling and Distributing Water Containers

The people who are filling the water containers and distributing them around the Islands will probably not be certified water operators. The procedures developed as a part of this plan are simple and easy to follow. These procedures will include contamination prevention, container control and chlorination procedures. Details for these procedures are in Appendix E.

Operational Status Inventory

After an event, the operational status of water systems must be assessed. This would be accomplished by self reporting and by having emergency response crews and other County and State authorities visit and make contact with the listed contact person for the water system as contained on the Inventory form. The results of this survey would be reported to the Emergency Operations center and an inventory of operational water systems would be created. This data coupled with the other data contained on the inventory form would allow Emergency Management to select water systems that have emergency power and water in excess to their current needs. It must be remembered that the selected water systems providing water for distribution have a finite supply of fuel and must have their fuel supply replenished.

Equipment Procurement

The initial response to an incident that requires the distribution of potable water would be best served with small (2½ gallon to 5 gallon) containers. Containers would be filled at water systems that are operational and have water in excess to their current needs. The filled

containers could be transported on any vehicles that are traveling throughout the County and dropped off at the distribution locations, as designated by DEM. It must be remembered that once these containers leave the control of Emergency Management or the water system, they cannot be refilled and given to another person. The person in custody of a container can refill the container from the distribution site, for his or her own use only.

The longer response effort would be better served by the use of 250 to 300 gallon bladders, which are available from several sources, manufactured to fit in the back of pickup trucks. These bladders would be transported to staging or distribution sites and be used to fill potable water containers at those locations. The use of bladders would require hoses and manifolds specifically designed to fill smaller containers. Hoses could be procured in a configuration to fit our needs and manifolds could be manufactured locally.

Chlorine must be stocked and written procedures provided to adequately chlorinate any water distributed. This will ensure that no bacterial contamination exists in the distributed water. Tablet sodium hypochlorite is the best product, as it has a very long shelf life and is relatively safe to use. Specific procedures will be provided for mixing the hypochlorite and dosage rate charts will be provided.

Equipment for checking chlorine residual must be stocked to ensure that enough chlorine is used to disinfect the water and that too much chlorine is not used which may be a health hazard. These test strips are relatively inexpensive and very easy to use.

This equipment must be stocked prior to an event, and must be pre staged, preferably in three locations, North Whidbey, South Whidbey and Camano Island. It must be kept in dry storage. Conex type dry storage containers staged at the County Road Shops would fit this need. This equipment has a long but not indefinite shelf life. Provisions need to be made to replace this equipment based on a continuing basis.

Data Collection

In 2007, a Water Systems Inventory form was sent to all Group A water systems in Island County. 291 forms were sent out and approximately 90 responses were received. The information garnered from the responses must be entered into a data base that has the ability to be sorted by priority of data needed. It is yet to be determined who will enter the data and who will keep the data base updated. It is important that this data base be updated yearly.

A list of certified water operators has been assembled. Washington State Department of Health is reluctant to provide a current list of water operators is Island County due to privacy issues. A list is included in this document that was put together from several sources. It will be difficult to maintain and update.

Proposed List of Assets

These tables contain the assets needed to provide adequate potable water (1 gallon per person per day) for approximately 30 days without outside replenishment. If needed, these assets could be purchased over a period of six years. Service life replacement would require that these assets be replaced on a scheduled basis, requiring a continuing commitment of funds.

Table A assumes it would take Island County Department of Emergency Management ten days after water distribution commences to have the assets in place to start delivering water in bladders.

TABLE A

<i>Item</i>	<i>Quantity</i>	<i>Cost</i>	<i>Total</i>
2 ½ gallon collapsible containers	40,000	\$ 3.00	\$ 120,000
5 gallon collapsible containers	60,000	\$ 3.00	\$ 180,000
250 gallon bladders	40	\$ 800.00	\$ 32,000
Chlorine tablets (Package of 10)	24,000	\$ 4.00	\$ 96,000
Chlorine test strips (Package of 50)	2000	\$ 18.00	\$ 96,000
Container filling manifolds	20	\$ 200.00	\$ 4,000
Container tags	100,000	\$ 0.05	\$ 5,000
Total			\$473,000

Assuming a six year phase in and required replacement, per year cost \$78,833.

Table B assumes that it would take Island County Department of Emergency Management three days after water distribution commences to have the assets in place to start delivering water in bladders.

TABLE B

<i>Item</i>	<i>Quantity</i>	<i>Cost</i>	<i>Total</i>
2 ½ gallon collapsible containers	15,000	\$ 3.00	\$ 45,000
5 gallon collapsible containers	16,500	\$ 3.00	\$ 49,500
250 gallon bladders	40	\$ 800.00	\$ 32,000
Chlorine tablets (Package of 10)	24,000	\$ 4.00	\$ 96,000
Chlorine test strips (Package of 50)	630	\$ 18.00	\$ 11,340
Container filling manifolds	20	\$ 200.00	\$ 4,000
Container tags	35,000	\$ 0.05	\$ 1,750
Total			\$ 239,590

Assuming a six year phase in and required replacement, per year cost \$39,932.

These estimates do not include storage costs. 20 foot containers can be purchased and delivered for approximately \$2,500, per container. One or two containers would be required at the four recommended staging sites.

SECTION 3 – POST EMERGENCY DECLARATION ACTION ITEMS

Action 1: Appoint Potable Water Coordinator

Step 1 – Island County Department of Emergency Management shall select a person knowledgeable in water system operations, rules and regulations. Two possible sources include:

- An employee of Island County Public Health knowledgeable in potable water treatment and delivery.
- Certified Water Operators: A list of Island County certified water operators is included in Appendix A of the Island County Emergency Potable Water Plan.

Proceed to action item 2.

Action 2: Inventory of Operable Water Systems

Identify possible sources of potable water:

Step 1 - A data base of water systems within Island County is included in this plan as Appendix B. Select the largest systems with emergency power as likely candidates. The data base of water systems contains contact information and locations for many water systems.

Step 2 - Through the PIO, advertise in any way possible for water systems with excess water to contact the EOC.

Step 3 - If directed, initiate contact with the selected water systems by phone, if available. If phone service is unavailable, distribute forms and complete information request forms as contained in Appendix C via field crews.

Step 4 - Identify any additional systems that potentially have excess water and be prepared to contact them as needed.

Step 5 - Plot locations of water systems with excess water on a map.

Step 6 - Collate received information and advise the Logistics Chief.

Proceed to action item 3.

Action 3: Review of Pre Staged Assets

Step 1 - Determine location of pre staged assets.

Step 2 - Verify inventory of contents (Refer to Appendix D).

Step 3 - Repeat for other locations as necessary.

Proceed to action item 4.

Action 4: Identify Manpower and Vehicles

Step 1 - The Logistics section will advise the Potable Water Coordinator as to the quantity of water to be distributed.

- A. Determine the number and type of containers needed to best fill the request.

- B. Determine the number and type of vehicles needed to transport the containers to the filling locations and transport the water to the distribution points.
- C. Determine manpower requirements for filling and distribution
 - Manpower assigned will be required to follow the provided instructions to ensure that all water distributed is potable and safe.
- D. Advise the Logistics Chief of the following items:
 - 1) Location of pre staged assets
 - 2) Supplies to be picked up (type and quantity)
 - 3) Filling locations
 - 4) Vehicle requirements
 - 5) Manpower requirements

Proceed to action item 5.

Action 5: Distribution of Instructions

Step 1 - Locate instructions and forms for people filling, chlorinating, distributing and tracking water as contained in Appendix E.

Step 2 - If not pre staged, copy and distribute filling and chlorination instructions to the Logistics Section for forwarding to the people actually filling the containers.

Proceed to action item 6.

Action 6: Deploy Assets

Step 1 - Working with the Logistics section, coordinate the deployment of assets to the selected water fill and pickup points.

Step 2 – Emphasize to all persons dealing with water distribution the importance of following the instructions, tracking procedures, and chlorination procedures.

Proceed to action item 7.

Action 7: Disinfect and Fill Containers

Through the Logistics section follow these steps:

Step 1 - Ensure that the residual chlorine detection equipment is distributed with the potable water containers.

Step 2 - Ensure that chlorine residuals are recorded on the water distribution form and the individual container tags, Appendix E.

Step 3 - Ensure that adequate chlorine is added to water to produce a detectable free chlorine residual of 0.5 milligram per liter

Proceed to action item 8.

Action 8: Load and Distribute Containers

Through the Logistics section follow these steps:

Step 1 - Track container filling progress and procedures using tags and tracking forms (Appendix F).

Step 2 - Advise logistics planners on replenishment of equipment and supplies.

Step 3 - Advise logistics planners that the containers are a one-time use asset and cannot be turned in for refilling. The containers may be refilled by persons for their personal use only. Chlorination procedures in Appendix E must be used.

Proceed to action item 9.

Action 9: Fueling

Assess the fuel needs for backup generators at participating water systems by doing the following:

Step 1 - Review Water System Information Request Form (Appendix C).

Step 2 - As possible, contact water systems and assess type, quantity and amount of fuel needed to continue providing potable water.

Step 3 - Advise Logistics of current and future needs.

Step 4 - Advise water systems as to if they can expect to be provided with fuel for continued operations.

End of action items.

**Appendix A
Island County Water Operators**

INSERT APPENDIX A HERE-----

**Appendix B
Island County Water Systems**

INSERT APPENDIX B HERE-----

**ISLAND COUNTY
EMERGENCY PLANNING FOR POTABLE WATER**

**Appendix C
Water Emergency Preparedness
Information Request Form**

To be filled out for water systems that may have water available for distribution:

Name _____

Phone Number _____

Cell Phone Number _____

System Name _____

Physical Address of Water _____

Status of Water System _____

Amount of Excess Water in gallons per day _____

Is the Water Chlorinated? _____

Fuel/chemical requirements

Location of distribution point _____

***RETURN COMPLETED FORM TO
ISLAND COUNTY DEPARTMENT OF EMERGENCY MANAGMENT***

**Appendix D
Inventory of Pre Staged Assets**

North Whidbey Island _____

The following supplies are at this location:

- _____ xxx gallon bladders
- _____ 2 ½ gallon containers
- _____ 5 gallon containers
- _____ Packages of chlorine tablets
- _____ Containers of chlorine test strips
- _____ Filling equipment
- _____ Chlorination instructions
- _____ Tracking forms
- _____ Container labels

South Whidbey Island _____

The following supplies are at this location:

- _____ xxx gallon bladders
- _____ 2 ½ gallon containers
- _____ 5 gallon containers
- _____ Packages of chlorine tablets
- _____ Containers of chlorine test strips
- _____ Filling equipment
- _____ Chlorination instructions
- _____ Tracking forms
- _____ Container labels

**ISLAND COUNTY
EMERGENCY PLANNING FOR POTABLE WATER**

Camano Island

The following supplies are at this location:

- _____ xxx gallon bladders
- _____ 2 ½ gallon containers
- _____ 5 gallon containers
- _____ Packages of chlorine tablets
- _____ Containers of chlorine test strips
- _____ Filling equipment
- _____ Chlorination instructions
- _____ Tracking forms
- _____ Container labels

**Appendix E
Filling and Chlorination Instructions**

1. Inspect containers for integrity, cleanliness and usability
 - A. Reject containers that are exceeding dirty or compromised
2. Inspect filling equipment (hoses and fittings) for cleanliness
3. Make stock chlorine disinfection solution for disinfecting filling equipment
 - A. Stock Disinfection solution instructions
 - 1) Put 4 tablets of chlorine in a 2 ½ gallon container.
 - 2) Fill container with water
 - 3) Shake thoroughly
 - 4) Check residual free chlorine in container. Residual free chlorine must be at least 10 mg/l.
4. Swag/dunk filling equipment with chlorine stock equipment as needed
5. Add ½ chlorine tablets to each 2 ½gallon container prior to filling. Add 1 chlorine tablet to each 5 gallon container prior to filling.
6. Fill containers with water.
 - A. Use caution when filling containers to prevent contamination. Do not let disinfected equipment and hoses touch the ground or any other source of possible contamination
7. Shake containers to distribute chlorine
8. Wait 10 minutes.
9. Check free residual chlorine using provided chlorine test strips
 - A. Free chlorine residual must be between .5 and 4 milligrams per liter. Reject any water that does not meet these guidelines. Add 1 chlorine tablet to containers with less than .5 milligram per liter free chlorine. Shake container to dissolve chlorine and recheck for free chlorine level. For containers with more than 4 milligrams per liter, shake and let set. Recheck free chlorine level until detected free chlorine level is below 4 milligrams per liter.
10. Ensure all containers are kept tightly sealed and free of contamination
11. Fill out the inventory and tracking form. This form will remain with the water containers until distribution and then returned to EOC.
12. Tag/mark each water container as to date, time filled, filling location and chlorine residual

**ISLAND COUNTY
EMERGENCY PLANNING FOR POTABLE WATER**

**Appendix F
Potable Water Tracking Form**

To be filled out by the person picking up and delivering water from water pickup points and delivering the water to distribution points

1. Date _____ Time _____
2. Name of person doing transport _____
3. Location of pick up _____
4. Water providers name _____
5. Time of pickup _____
6. Verify that each container is property tagged with date, time, filling location and free chlorine residual. Log above information in spaces provided.

Number and size of containers _____

Filling location _____

Free chlorine residual _____

7. Delivery address _____
8. Delivery date _____
9. Delivery time _____
10. Name of person accepting custody _____

Individual container tag information

Date filled _____

Time filled _____

Filling location _____

Free chlorine residual _____ mg/l

***RETURN COMPLETED FORM TO
ISLAND COUNTY DEPARTMENT OF EMERGENCY MANAGMENT***