



Health & Community Services
San Juan County

P.O. Box 607 ♦ 145 Rhone, Friday Harbor, WA 98250
Phone: (360) 378-4474 Fax: (360) 378-7036

RAINWATER CATCHMENT CHECKLIST

Applicant: _____ Telephone: _____

Tax Parcel: _____

The design for a rainwater catchment system is required to contain the following information:

- ☐ 1. A scaled layout sketch of the system showing the system design.
- ☐ 2. A completed rainwater catchment water budget (see attachment A- include with Operation and Maintenance Manual).
- ☐ 3. Description of how the system works. Include system components and their uses and the number of persons the system is designed for (include with Operations and Maintenance Manual).
- ☐ 4. Materials Used. Items C-F must be comply with NSF, FDA, or AWWA Drinking Water Standards for potable water (include model #, manufacturer and NSF, FDA, or AWWA certification):
 - ☐ A. Roofing Material (enameled metal, tile or cement tile): _____.
 - ☐ B. Rain gutters (PVC or enameled metal): _____.
 - ☐ C. Pre-storage filtration (prior to storage tank): _____.
 - ☐ D. Water Storage Tanks: _____.
 - ☐ E. Filtration (must meet NSF Standard 53 or 58 for cyst removal – see Appendix A, page 4 *Filtration for Household Use* for specifics).
_____.
 - ☐ F. Disinfection (chlorination, ozone or ultraviolet [ozone and ultraviolet units must have a system failure warning device]): _____.
- ☐ 5. A completed *Declaration of Covenant for an Alternative (Non-Standard) Water Source* (must be recorded with County Auditor after approval of water system).
- ☐ 6. An approved Operation and Maintenance Manual (containing at a minimum of the items listed in attachment A). This can be included on page 2 of the *Declaration of Covenant for an Alternative (Non-Standard) Water Source* and must be recorded with County Auditor after approval of water system.

For further information on rainwater catchment, see pages 1 & 4 of Appendix A of the Rules and Regulations of the San Juan County Board of Health Regarding Water Wells and Water systems: Guidelines for Rainwater Catchment & Filtration for Household Use.

Attachment A
Rainfall Catchment Water Budget

Step 1 Number of users: _____
 Gallons per day/person: x _____
 Gallons per day: = _____ (users x gpd /p =)

Step 2 Gallons per day: _____ (see total for step 1)
 Days in residence/year: x _____
 Total water use per year: = _____ (gpd x days of use =)

Step 3 Rainfall (see attachment B): _____
 Water per sq. ft./inch of rain: x 0.623
 Gallons water/sq. ft./year: = _____ (rainfall x .623 =)

Step 4 Total water use per year: _____ (see total for step 2)
 Gallons water/sq.ft./year: _____ (see total for step 3)
 Sq. ft. collection area needed: = _____ (divide total water use by
 Gallons water/sq. ft./year)

Step 5 Days of storage needed: _____ (90 or # of days in step 2)
 Gallons required per day: x _____ (see total for step 1)
 Gallons of storage required: = _____ (days of storage x gpd)

REQUIRED COLLECTION AREA (roof sq. footage): _____ (see total for step 4)

REQUIRED STORAGE CAPACITY: _____ (see total for step 5).

Operation and Maintenance Plan

Roofing: Roof should be cleaned as needed or at least once per year..

Rain Gutters: Gutters should be cleaned at least monthly during winter storm season to prevent accumulation of debris, leaves and needles. Screens should be installed on top of downspouts to prevent accumulation of debris from getting into system.

Pre-storage filtration: Designed to prevent accumulation of sediments and other particles in water storage tank(s).

Storage Tanks: Should be cleaned and disinfected as needed or at least once per year.

Filtration: Operation and maintenance of the filtration system is critical. If proper maintenance is not followed, contaminants can pass through the filter and/or collect and multiply on the filter's surface. Specific maintenance schedules are based on manufacturer's recommendation.

Disinfection: If manually chlorinated, describe procedure. All other types of disinfection (automatic chlorinator, ozone, ultraviolet) will have specific maintenance schedules based on manufacturer's recommendations.

Specifications and design for this system are on file with San Juan County Health & Community Services.

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Guidelines for Rainwater Catchment

Rainwater catchment must be treated for domestic use. Any use of untreated catchment water for irrigation shall be clearly labeled with signs indicating non-potable water.

All rainwater catchment systems must comply with the standards in the *EPA Manual for Individual and Non-community Water Supply Systems* and all components must comply with National Sanitation Foundation (NSF), Food and Drug Administration (FDA), or American Water Works Association (AWWA) standards.

All storage tanks for water intended for domestic use must meet drinking water standards.

There can be no cross-connections between potable and non-potable water supplies.

Treatment systems must include the following:

- Continuous disinfection: chlorination, ozone, ultraviolet light.

Ozone and ultraviolet disinfection systems must have a system failure warning device. Homeowners using chlorine should test for a chlorine residual daily with an appropriate test kit. A free chlorine range of 0.2 to 0.6 is recommended.

- Filtration: See Filtration for Household Use - Appendix A, page 4.
- An approved *Operations and Maintenance Plan* with specific maintenance schedules based on manufacture's recommendations recorded with the County Auditor.
- Routine service of all equipment should occur at least once a year.

A *Declaration of Covenant of an Alternative (Non-standard) Water Source* must be recorded with the County Auditor.

A permanent sign describing the system and warning users shall be attached in a prominent location, such as above the kitchen sink.

San Juan County

Guidelines for Filtration for Household Use

Water from vulnerable sources, such as rainwater catchment and shallow wells and springs is subject to bacterial growth. Disinfection with chlorine alone is effective but cysts such as giardia and cryptosporidium can survive. Filtration can remove these cysts and many other pathogens, however operation and maintenance of the filtration system is critical. If proper maintenance is not followed, contaminants can pass through the filter and/or collect and multiply on the filter's surface.

Successful filtration is critical to the effectiveness of disinfection with ultraviolet light and can reduce the amount of chlorination needed.

The most effective filtration for water with high levels of organic matter or sediment is slow and rapid sand, diatomaceous earth, and various package plants. These types of filters require professional maintenance. See the *EPA Manual of Individual and Non-community Water Supply Systems* for more information. Other filtration involves physical cartridge type filters, which can be effective but must be carefully maintained, otherwise they will become a source of contamination. Cartridge filters that provide automatic warning devices when a new cartridge is needed are recommended.

It is possible to remove chlorine with a granular activated carbon cartridge filter at the point of use (such as under the kitchen sink). For a shallow well or spring with little organic material, chlorination of the water, with a dechlorinating filter at the kitchen sink, can be a simple and effective treatment system.

Reverse osmosis membrane filtration is highly effective in removing all pathogens and other contaminants. This type of system also requires careful maintenance and operation on a daily basis.

- Filtration units must be certified by the National Sanitation Foundation (NSF) for their intended use.
- All filtration units must be maintained regularly, based on manufactures' recommendations.
- Treated water should be tested for bacteria at least quarterly. Treatment system must be repaired or adjusted immediately if the water tests positive for coliforms.
- Homeowners using chlorine should test for a chlorine residual regularly daily with an appropriate test kit. A free chlorine range of 0.2 to 0.6 ppm is recommended. Homeowners using ultraviolet light, ozone, or reverse osmosis should have system failure device installed in plain sight.

ATTACHMENT B: RAINWATER CATCHMENT CHECKLIST

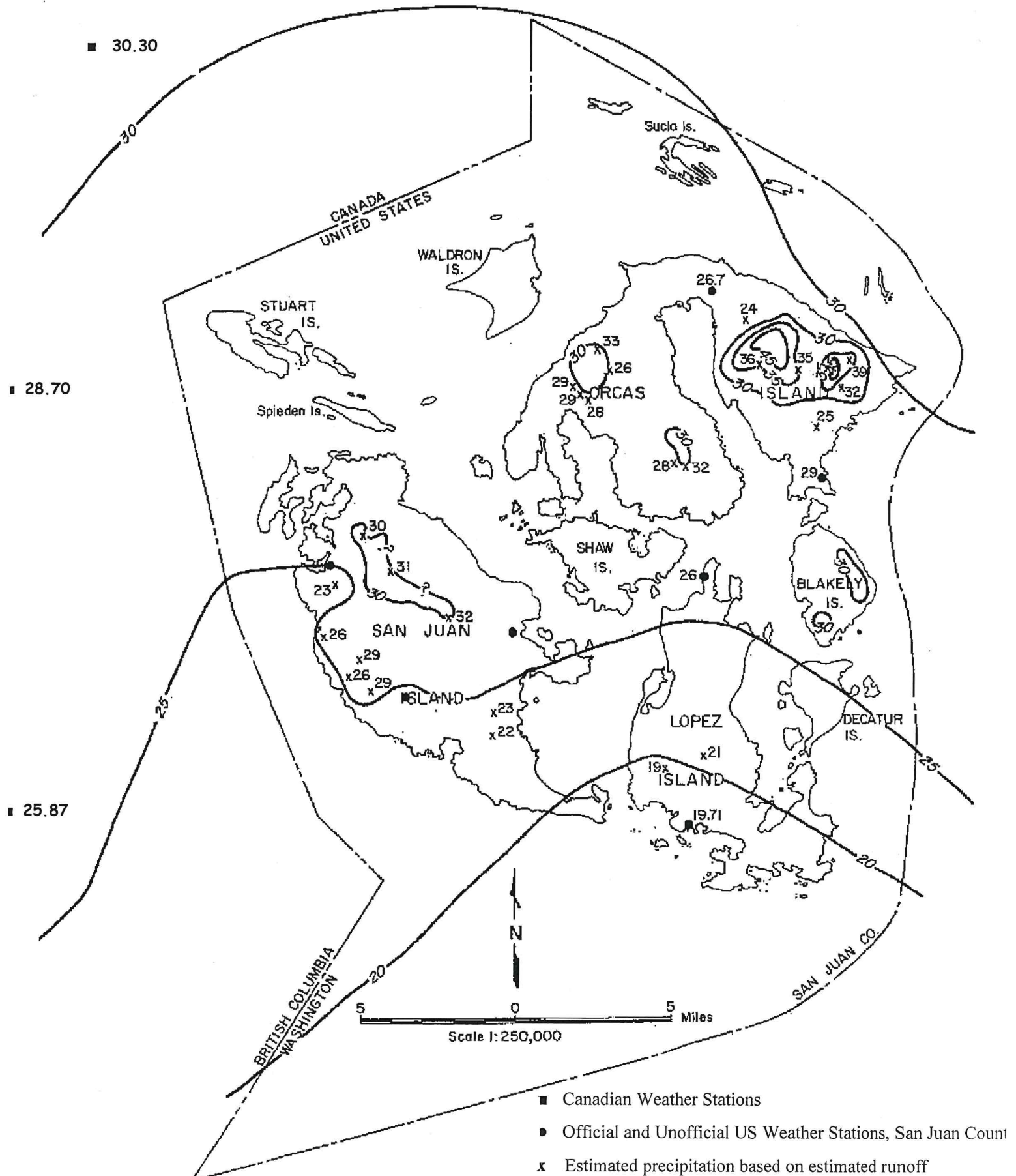
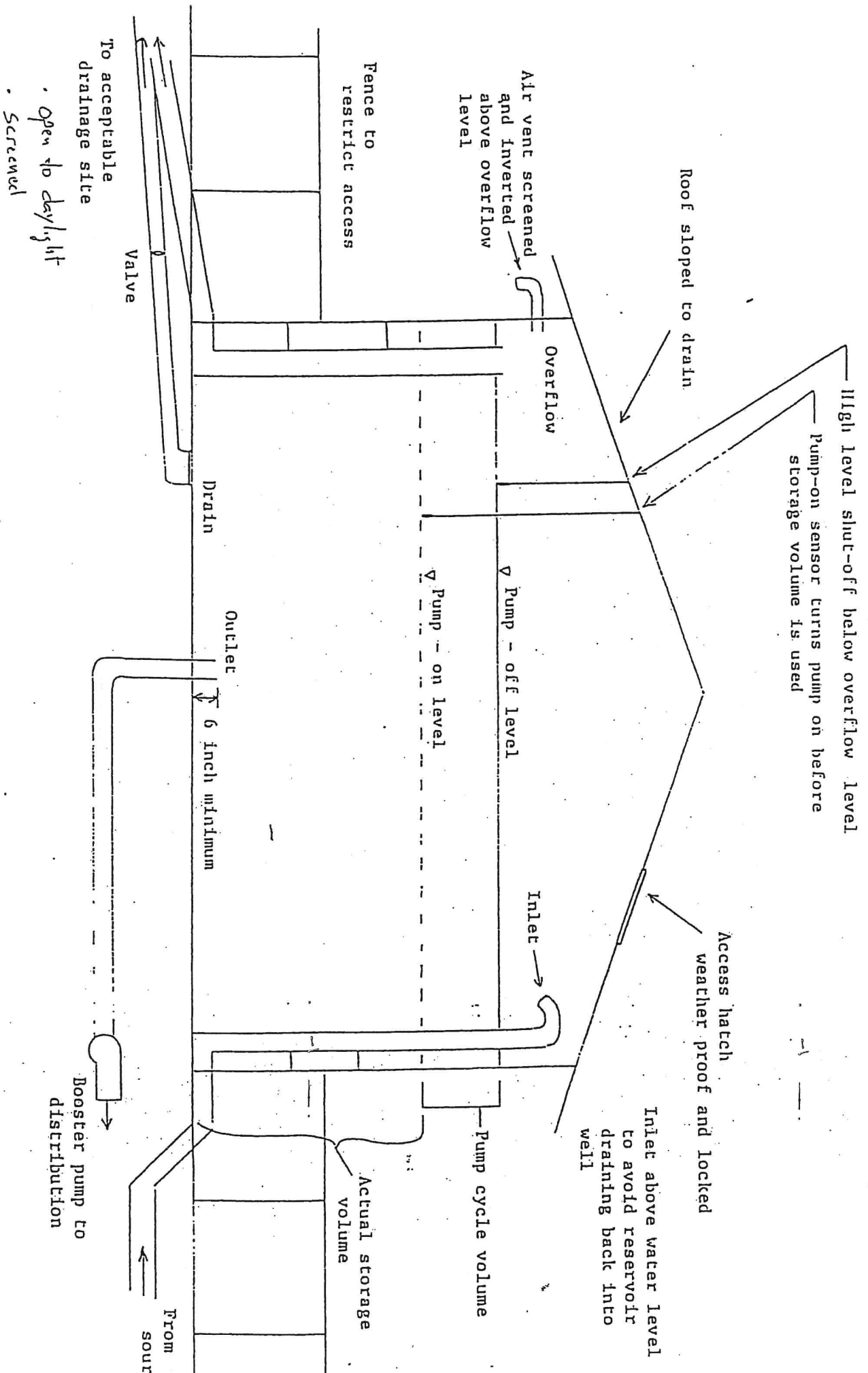
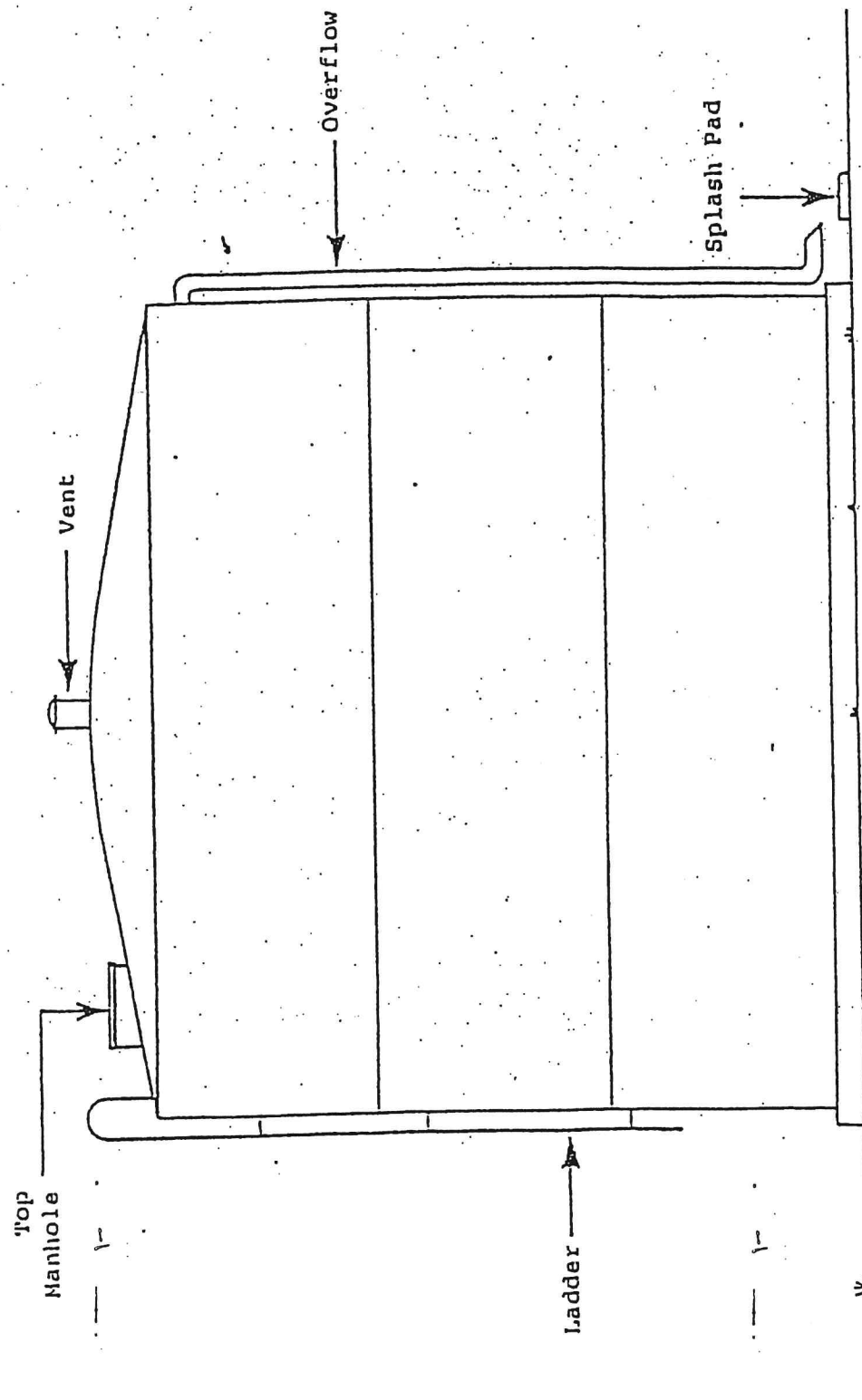


Figure I: ESTIMATED MEAN ANNUAL PRECIPITATION





Gravity Storage Tank

Figure 6-1

After Recording Return To:

San Juan County Health & Community Services
P.O. Box 607
Friday Harbor, WA 98250

DECLARATION OF COVENANT OF AN ALTERNATIVE
(NON-STANDARD) WATER SOURCE

Must be printed on legal size paper

Grantor(s): _____

Grantor(s) Address: _____

Location Address: _____

Grantee(s): _____

Tax Parcel Number(s): _____ Attach Complete Legal Description (required)

Abbreviated Legal: _____

_____ 1/4 of the _____ 1/4 of Section _____, Township: _____ North, Range _____ West, W.M.

The water source for this parcel is approved for one time only for the owner. This approval will be based on certification of operation and maintenance requirements and compliance with current state and county regulations.

☐ A. This water system is non-standard and consists of:

- | | |
|--|--|
| <input type="checkbox"/> A well that tests positive for total coliform (but not for E. coli or fecal coliform). | <input type="checkbox"/> A well that produces less than 200 gallons per day |
| <input type="checkbox"/> Water is hauled to a storage tank. | <input type="checkbox"/> Rainwater catchment system. |
| <input type="checkbox"/> Seawater treatment. | <input type="checkbox"/> Shallow well or spring. |
| <input type="checkbox"/> Use of treated Groundwater with Arsenic, Barium, or Fluoride contamination above the primary MCL. | <input type="checkbox"/> Use of Groundwater with Fluoride Contamination above EPA Secondary MCL level. |

- ☐ B. The source of water for this system is vulnerable to seawater intrusion. Chloride levels of _____ mg/L. Taken on _____ and pump/test and chloride monitoring results taken on _____ yearly monitoring for indicate a potential for seawater intrusion. Approval of this source of water requires _____ and _____ of chloride and conductivity and static water level readings be completed in _____ of each year with the results submitted to the San Juan County Health & Community Services and the design for this system conforms to the guidelines for seawater intrusion areas.

- ☐ C. The owner of this property has been granted a waiver from requirements for a pump test. The capacity of this well has not been verified according to the standards established in the 'Rules and Regulations of the San Juan County Board of Health Regarding Water Wells and Water Systems'.

I AM THE LEGAL OWNER OF RECORD for the above-described property. I understand the limitations of the water source I propose to use. This source of water is for my personal use only. These covenants shall run with the land and shall be binding to all parties having or acquiring any right, title, or interest in the land described herein or any part thereof, and shall inure to the benefit of each owner thereof.

WITNESS MY HAND THIS _____ day of _____, 20 _____.

(State of Washington,

County of _____)

Signature (printed name)

Signature (printed name)

On this _____ day of _____, 20 _____, before me, the undersigned Notary Public, personally appeared and

☐ is personally known to me, ☐ proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) ☐ they, ☐ he, ☐ she subscribed to the within instrument, and acknowledged that ☐ they, ☐ he, ☐ she, executed it.

WITNESS MY HAND AND OFFICIAL SEAL,

Notary's Signature

Printed Name

Notary Public in and for the State of Washington, residing in

My Commission Expires on _____

**DECLARATION OF COVENANT OF
APPROVAL OF AN ALTERNATIVE WATER SOURCE
San Juan County Code 8.06.140(3)**

Conditions of approval include: