



STATE OF WASHINGTON
DRAFT
REPORT OF EXAMINATION
FOR NEW SECONDARY USE WATER RIGHT

WR Doc ID 2032985

PRIORITY DATE	WATER RIGHT APPLICATION NUMBER
September 19, 1997	S4-32587

NAME AND MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
John & Judy Rolfs 14208 S. Lakeshore Road Chelan, WA 98816	Same

Total Rate and Quantity Authorized for Diversion

DIVERSION RATE (cfs)	ANNUAL QUANTITY (ac-ft/yr)
0.05	0.50

cfs = Cubic Feet per Second; ac-ft/yr = Acre-feet per Year

Purpose(s)

PURPOSE	DIVERSION RATE (cfs)	ANNUAL QUANTITY (ac-ft/yr)	PERIOD OF USE
Single Domestic	0.05	0.50	Year round

IRRIGATED ACRES	PUBLIC WATER SYSTEM INFORMATION	
NA	WATER SYSTEM NAME and ID	CONNECTIONS
	NA	1

SPECIAL REMARKS:

Includes minor (lawn and garden) outdoor irrigation.

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
Chelan	Lake Chelan	Chelan River	47 - Chelan

SOURCE NAME	PARCEL	TOWNSHIP	RANGE	SECTION	QQ Q	LATITUDE	LONGITUDE
Pump 1	282109695080	28 N.	21 E.W.M.	09	NW SW	47.9408	-120.2112

QQ Q = Quarter Quarter

Datum: NAD83/WGS84

Place of Use**PARCEL(S)**

282109695080

LEGAL DESCRIPTION OF THE AUTHORIZED PLACE OF USE

That portion of Lots 13 and 14 in the Plat of Maple Creek Cabins, recorded in Volume 5 of Plats, page 37, records of the Chelan County Auditor laying southerly of the following described Division Line.

Division Line:

Commencing at an iron pipe monument at the NW corner of said Lot 14, from which a concrete plat corner monument at the NW corner of Lot 20 in said Plat of Maple Creek bears N 02 deg 53'40" W at a distance of 278.82 feet; thence S 09 deg 26' 40" W along the westerly line of said Lot 14 for a distance of 46.04 feet to the True Point of Beginning. Thence S 69 deg 44' 36" E for 70.79 feet to an angle point on the face of a concrete seawall at the shore of Lake Chelan; thence S 83 deg 25'24" E along the face of said seawall for a distance of 8.05 feet; thence leaving said seawall, S 88 deg 34' 36" E for 82.35 feet to the easterly line of said Lot 13 and the terminus of this Division Line.

Proposed Works

One house is already constructed on the property. Existing pump is ½ hp designed to convey approximately 25 gpm, installed in Lake Chelan. All infrastructure is in place.

Development Schedule

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	PUT WATER TO FULL USE BY THIS DATE
Complete	12/31/2023	12/31/2024

Attention: These dates represent deadlines that must be met or risk cancellation of this authorization. Submittal of formal documentation for each stage is required. Extensions may be requested.

Measurement of Water Use

HOW OFTEN MUST WATER USE BE MEASURED AND RECORDED?	Bi-weekly
HOW OFTEN MUST WATER USE DATA BE REPORTED TO ECOLOGY?	Annually by January 31
WHAT QUANTITY SHOULD BE REPORTED?	Total annual quantity in acre-feet or gallons
WHAT RATE SHOULD BE REPORTED?	Annual peak rate of diversion in cfs

Provisions**Fish Screening Criteria**

The intake(s) shall be screened in accordance with Department of Fish and Wildlife screening criteria (pursuant to RCW 77.57.010, RCW 77.57.070, and RCW 77.57.040). Contact the Department of Fish and Wildlife if you have questions about screening criteria.

Department of Fish and Wildlife
Attn: Habitat Program
600 Capitol Way N
Olympia, WA 98501-1091

Phone: (360) 902-2534
Website: <http://wdfw.wa.gov/about/contact/>

Hydraulic Project Approval

The applicant must obtain Hydraulic Project Approval from the Washington Department of Fish and Wildlife for all construction activities occurring within the high-water mark of Lake Chelan and its tributaries. Please contact:

Department of Fish and Wildlife
3860 Chelan Hwy N.
Wenatchee, WA 98801-9625

Measurements, Monitoring, Metering, and Reporting

An approved measuring device must be installed and maintained for each of the sources identified by this water right in accordance with the rule “Requirements for Measuring and Reporting Water Use,” chapter 173-173 WAC, which describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology (Ecology) for modifications to some of the requirements.

Recorded water use data shall be submitted electronically by January 31 each year. To set up an Internet reporting account, contact the Central Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Central Regional Office for forms to submit your water use data.

Schedule and Inspections

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Water Use Efficiency

The water right holder is required to maintain efficient water delivery systems and use of up-to-date water conservation practices consistent with RCW 90.03.005.

Proof of Appropriation

Consistent with the development schedule given in this report (unless extended by Ecology), the water right holder must file a Notice of Proof of Appropriation (PA) of Water with Ecology. The PA documents the project is complete and all the water needed has been put to full beneficial use (perfected). In order to verify the extent of water use under this permit, an inspection of water use is typically required, known as a “proof exam”. After filing the PA, the water right holder’s next step is to hire a Certified Water Rights Examiner (CWRE) to conduct this proof exam. A list of CWREs is provided to the water right holder upon filing the PA with Ecology. The final water right document, a water right certificate, then may issue based upon the findings of the CWRE. Statutory county and state filing fees may apply prior to certificate issuance. If water is currently being used in a manner consistent with the proposed use (including an installed meter), and an aerial photograph and metering data verifying this use can be provided to Ecology at the time a Permit is issued, then Ecology may elect to accept filing of a proof of appropriation and issue a Surface Water Certificate without the requirement of hiring a CWRE.

Relinquishment of Existing Rights

This application is intended to replace water use under surface water claim S4-034489CL. Therefore, the applicant will submit a Voluntary Relinquishment Form for S4-034489CL within 30 days after permit issuance.

Findings of Fact and Order

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated.

Therefore, I ORDER **APPROVAL** of Application No. S4-32587, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do the following within 30 days of the date of receipt of the Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order to Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW, Ste 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

For additional information, visit the Environmental Hearings Office Website: <http://www.eho.wa.gov>

To find laws and agency rules, visit the Washington State Legislature Website: <http://www1.leg.wa.gov/CodeReviser>

Authorizing Signature

Signed at Union Gap, Washington, this 10th day of June, 2022.



Mark Schuppe, Interim Section Manager
Water Resources Program
Central Regional Office

MS:CG:ns/220614

INVESTIGATOR'S REPORT

Water Right Application No.: S4-32587 (Mr. John and Judy Rolfs)
Investigator: Adam Neff, LHG (RH2 Engineering, Inc.)

BACKGROUND

This report serves as the written findings of fact concerning Water Right Application Number S4-32587.

Per the First Amendment to Agreement Concerning Water Right Certificate No. 319, executed September 22, 2017, by the Washington State Department of Ecology and Public Utility District No. 1 of Chelan County, Washington, this water right will be a secondary permit for use of water within the Lake Chelan Watershed that is currently authorized to be stored in the Lake Chelan Reservoir under Certificate 500 (640,000 acre-feet). RCW 90.03.370(1)(a) states:

"...the party or parties proposing to apply to a beneficial use the water stored in any such reservoir shall also file an application for a permit, to be known as the secondary permit, which shall be in compliance with the provisions of RCW 90.03.250 through RCW 90.03.320."

The subject water right application was received on September 19, 1997 for the appropriation of surface water from Lake Chelan at a diversion rate of 0.05 cubic feet per second (25 gallons per minute) and 0.5 acre-feet per year (ac-ft/yr) for the purposes of year round single domestic supply and landscape irrigation for one home. All infrastructure is in place. This right shall replace an existing short form claim filed by a previous landowner.

The first *Assignment of Application* form was received and accepted by Ecology on April 20, 1998, assigning interest from Bernie Pace to Michael Lew Mullen. The second *Assignment of Application* form was received and accepted by Ecology on December 16, 2013, assigning interest from Michael Lew Mullen to Genette M. Mullen. The third *Assignment of Application* form was received and accepted by Ecology on April 27, 2015, assigning interest from Genette M. Mullen to John and Judy Rolfs.

Table 1. Summary of Requested Water Right

Applicant Name	John and Judy Rolfs (Originally Bernie Pace)
Priority Date	September 19, 1997
County	Chelan
WRIA	47
Water Source	Lake Chelan
Tributary to	Chelan River
Place of Use	<p>Parcels: 282109695080</p> <p>Legal: That portion of Lots 13 and 14 in the Plat of Maple Creek Cabins, recorded in Volume 5 of Plats, page 37, records of the Chelan County Auditor laying southerly of the following described Division Line.</p> <p>Division Line: Commencing at an iron pipe monument at the NW corner of said Lot 14, from which a concrete plat corner monument at the NW corner of Lot 20 in said Plat of Maple Creek bears N 02 deg 53'40" W at a distance of 278.82 feet; thence S 09 deg 26' 40" W along the westerly line of said Lot 14 for a distance of 46.04 feet to the True Point of Beginning. Thence S 69 deg 44' 36" E for 70.79 feet to an angle point on the face of a concrete seawall at the shore of Lake Chelan; thence S 83 deg 25'24" E along the face of said seawall for a distance of 8.05 feet; thence leaving said seawall, S 88 deg 34' 36" E for 82.35 feet to the easterly line of said Lot 13 and the terminus of this Division Line.</p>

Purpose	Instantaneous Rate (cfs)	Annual Quantity (ac-ft/yr)	Begin Season	End Season
Domestic and landscape irrigation for 1 home	0.05	0.5	01/01	12/31

Source Name	Parcel	Township	Range	Section	QQ Q	Latitude	Longitude
Pump 1	282109695080	28N	21 E W.M.	09	SW SW	47.9408	-120.2112

Datum: NAD83/WGS84

INVESTIGATION

Proposed Use and Basis of Water Demand

Site Description

On December 29, 2021, Adam Neff from RH2 Engineering, Inc. was allowed access to the site from the Rolfs to perform the site visit for this proposal. The Rolfs were unavailable to meet Mr. Neff as they were residing out of the state for the winter months.

The site consists of a single home located on Lake Chelan's shore. The property backs up to the S. Lakeshore Road. The home is approximately 1,200 square feet, and was constructed in 1962. There are two small storage sheds on the site and approximately 400 square feet of irrigated area (per Mr. Rolfs), including a small lawn, several flower/shrub/garden beds and a couple dozen potted plants.

The existing intake is located off the NE corner of the house. It consists of a deep well pump placed out in the Lake connected to a 1-inch diameter PVC pipe running into the house.

Lake Chelan Watershed Hydrology

The Lake Chelan Watershed covers 924 square miles (USGS, 2018) and is located in northcentral Washington State in Water Resource Inventory Area (WRIA) 47. The Lake's watershed spans from the crest of the Cascade Mountains in the west to the Public Utility District No. 1 of Chelan County (Chelan PUD) dam where water from Lake Chelan flows into the Chelan River, and eventually to the Columbia River, in the east.

Lake Chelan is 50.4 miles long (MWG and others, 1995), up to 1,486 feet deep, and has a surface area of approximately 33,344 acres (MWG and others, 1995). Lake Chelan Dam has created usable storage of 677,400 acre-feet when the water surface is at its normal maximum water surface elevation of 1,100 feet (RH2, 2009).

Average precipitation across the watershed ranges from approximately 150 inches near the crest of the Cascade Mountains to a low of 11 inches in the City of Chelan. The average annual precipitation is approximately 45 inches (RH2, 2009).

Of the total inflow to the Lake, the Stehekin River accounts for 65 percent, Railroad Creek accounts for 10 percent, approximately 50 other smaller tributaries contribute another 21 percent, and direct precipitation accounts for 4 percent of the total inflow (MWG and others, 1995).

Average outflow from Lake Chelan is estimated to be approximately 1.49 million acre-feet, equivalent to a basin-wide average runoff of 30.4 inches and a constant flow of approximately 2,058 cubic feet per second (USGS, 2018).

Lake Chelan Reserve

Processing of new water right applications is made possible through accessing the Lake Chelan Reserve (Reserve) created through a 1992 agreement between Chelan PUD and the Washington State Department of Ecology (Ecology) settling a court dispute. The 1992 Agreement, and subsequent 2017 First Amendment, clarified the extent of the Reserve that allows surface water diversions and ground water withdrawals within the Lake Chelan Water Basin, upstream of Lake Chelan Dam, to impact Chelan PUD power generation at the dam. The Reserve has the following attributes:

- An estimated 12,000 acre-feet per year (ac-ft/yr) of water being utilized at the time Ecology issued Chelan PUD's power generation right (Surface Water Right Certificate No. 319).
- An additional 33,000 ac-ft/yr of water unappropriated as of July 22, 1925, was eligible to be developed, for a total estimated amount of 45,000 ac-ft/yr.
- An additional 20,000 ac-ft/yr of water (65,000 ac-ft/yr total) was made available for development after 1992 by Chelan PUD.
- Fully non-consumptive uses, with beneficial use and return flow occurring above the Lake Chelan Dam, are not debited against the Reserve.
- The Reserve is debited based on each individual water right annual volume limits, with no credit given for the split between consumptive and non-consumptive uses within a water right.

Chelan County, Ecology, and Chelan PUD evaluated water availability under the Reserve prior to initiation of this coordinated cost reimbursement process and agreed to allocate new water rights, so long as water was legally available under the Reserve.

Water System Description

The existing water system consists of a single phase ½ hp well pump installed several hundred feet into the Lake and is connected to a pressure tank for the home.

History of Water Use

Historic water use as requested under this appropriation has been beneficially used under a surface water claim filed on August 1, 1973, under Water Resources' file number S4-045144CL. This appropriation seeks to replace uses asserted under the appurtenant claim.

Proposed Water Use

Under this application, the applicant is planning to beneficially use water for domestic supply for one home and associated landscape irrigation.

For single domestic and multiple domestic, including minor outdoor landscape irrigation, the standard allocation is 0.5 ac-ft/yr per dwelling. There is minimal amounts of outdoor irrigation; therefore, standard allocation is suitable based on the observed conditions and stated uses by the applicant.

Proposed Place of Use

The proposed place of use consists of one (1) tax parcel (**Table 2**).

Table 2
Parcels within the Proposed Place of Use

Parcel Number	Acres
282109695080	0.23

Other Rights Associated with Project or Place of Use

The Department of Ecology's Water Resources Explorer (<https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx> accessed on December 29, 2021) was used to identify water rights that are appurtenant to the proposed place of use.

One water right document is appurtenant to the proposed place of use.

The overlapping water right is water right claim S4-034489CL, which is a Short Form Surface Water Right Claim filed on August 1, 1973, by Bernie Pace. The short form claim asserts domestic and landscape irrigation use for the same legally described parcel as this application. Based on the shared place of use and discussion with the applicant, it is understood that this water right application seeks to authorize uses asserted under the short form claim since the current applicants are unsure if use under the surface water claim represents a valid, pre-code, water right.

The overlapping water right claim is listed in **Table 3**, along with the purpose of use.

Table 3.
Water Rights Appurtenant to the Proposed Place of Use

Water Right Name	Water Right Number	Source	Purpose of Use
Bernie Pace	S4-034489CL	Lake Chelan	Domestic and Landscape Irrigation

Once the permit is issued, the applicant will voluntarily relinquish the claim to clarify the water right record.

Hydrologic Evaluation

Lake Chelan is a dam-controlled reservoir that has a surface area of approximately 33,344 acres. The applicant will have a firm source of supply as long as the intake is adequately constructed to account for planned and unplanned reservoir water level fluctuations.

Materials Submitted in Support of Application

The applicant submitted a plat map including the lots lines for the POU.

ANALYSIS

Under Washington State law (RCW 90.03.250 through RCW 90.03.320), as identified under RCW 90.03.370(1)(a), each of the following four criteria must be met for an application for a new secondary use permit to be approved:

- Water must be available for appropriation.
- Water diversion and use must not cause impairment of existing water rights.
- The proposed water use must be beneficial.
- Water use must not be detrimental to the public interest (public welfare).

Water Availability

For any new secondary use permit, water must be both physically and legally available.

Physical Availability

For water to be physically available for appropriation, water must be present in quantities and quality and on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use or uses.

The applicant proposes to divert water from Lake Chelan.

Lake Chelan is a dam-controlled reservoir. Therefore, water is physically available for appropriation from this source as long as the point of diversion is adequately constructed to account for planned and unplanned reservoir water level fluctuations.

Legal Availability

To meet the legal availability test, the proposed appropriation may not divert and use water that is already “spoken for,” such as water from sources that are protected by administrative rule or court order, or that has otherwise been claimed, allocated, or adjudicated.

Legal availability within the Lake Chelan Water Basin is based on the Reserve.

Ecology maintains a database of Lake Chelan water rights that are debited against the Reserve. Based on the most recent accounting (October 5, 2021), 59,621.633 ac-ft/yr had been allocated and 5,378.367 ac-ft/yr remains in the Reserve for appropriation. **Table 4** breaks down the estimated annual volume requested under the current batch of 10 applications being processed through Phase 2 of the Lake Chelan Coordinated Cost Reimbursement program.

Table 4
Reserve Accounting Summary

Category	Volume (ac-ft/yr)	Reserve Remaining Volume after Issuance (ac-ft/yr)
Lake Chelan Reserve Total	65,000.000	65,000.000
Total Allocated Quantity (10/5/2021)	59,621.633	5,378.367
Lake Chelan Coordinated Cost Reimbursement – Phase 2 Applications, Approximate Volume	1,085.900	4,292.467

Based on the calculations in **Table 4**, there is sufficient water legally available under the Reserve to allow for approval of this water right application.

Impairment

In analyzing impairment, Ecology must make a determination as to whether existing water rights, including adopted instream flows, may be impaired by the diversion and proposed use.

Direct diversion from Lake Chelan will not impair any existing water rights since the level of the Lake is controlled by natural inflow and by operation of the Lake Chelan Project by Chelan PUD.

Beneficial Use

In the Supreme Court case *Ecology v. Grimes* (1993), the Court held that “for purposed of appropriated water rights, ‘beneficial use’ has two elements: 1) the purposes or types of activities for which the water may be used and 2) the amount of water that may be used as limited by the principle of ‘reasonable use.’”

Domestic and landscape irrigation are considered beneficial uses of water under RCW 90.54.020(1).

The rate and volume of water allocated under this water right is consistent with reasonable use of water for the purposes requested, in this watershed.

Public Interest

The diversion and associated use must not be detrimental to the public interest. At a minimum, the following are considered when making this assessment.

Notification to the Washington Department of Fish and Wildlife

Per RCW 90.03.280 and 77.57.020, Ecology must give notice to the Washington Department of Fish and Wildlife (WDFW) of applications to divert, withdraw, use, or store water.

On November 10, 2021, Andrew B. Dunn of RH2 Engineering, Inc. notified Mr. Steven Boessow (Water Rights Biologist) of WDFW via email of the pending surface water right application. On January 10, 2022, Mr. Boessow provided a letter stating that, “...WDFW does not oppose the issuance of this application. This application appears consistent with the Lake Chelan reserve.”

State Environmental Policy Act (SEPA)

Under chapter 197-11 WAC, a water right application is subject to a SEPA threshold determination (i.e., an evaluation of whether there will be significant adverse environmental impacts) if any of the following conditions are met:

- It is a surface water right application for more than 1 cfs, unless that project is for agricultural irrigation, in which case the threshold is increased to 50 cfs, so long as that irrigation project will not receive public subsidies;
- It is a groundwater right application for more than 2,250 gpm;
- It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above;
- It is a part of a larger proposal that is subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA);
- It is part of a series of exempt actions that, together, trigger the need to do a threshold determination, as defined under WAC 197-11-305.

Considering that none of the above conditions are met, the application under review is categorically exempt from a SEPA threshold determination.

Public Notice

RCW 90.03.265(3) requires that the Department of Ecology provide notice, both on its web site and in a newspaper of general circulation in the area where affected properties are located, if it elects to initiate a coordinated cost reimbursement process. Notice was provided on a Department of Ecology web site (<https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-rights/Public-notices-comments>) from October 24, 2019, through December 5, 2019. Notice of the coordinated cost reimbursement process was published by the Department of Ecology in the *Wenatchee World* on October 23 and 30, 2019.

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the county or counties where the water is to be stored, diverted, and used. Notice of this application was published in the *Chelan Mirror*, *Cashmere Valley Record*, and *Leavenworth Echo* on March 30, 2022, and April 6, 2022.

Consideration of Protests

No protests to this water right application were received.

Watershed Planning

The Lake Chelan Watershed Plan (RH2, 2012) and subsequent Detailed Implementation Plan (RH2, 2014) support processing of pending water right applications under a coordinated cost reimbursement program. Processing of this application is consistent with the intent of those plans.

Other Public Interest Concerns

None.

Conclusions

I find that:

- Water is physically and legally available.
- The appropriation will not impair existing rights.
- The proposed Single Domestic use is a beneficial use.
- Approval of this application will not be detrimental to the public interest.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend this request for a secondary use permit be **APPROVED** in the amounts and within the limitations listed below and subject to the provisions listed above.

Recommended Quantities, Purpose of Use, and Project Location

The rate and quantity of water recommended are maximum limits. The permit holder may only divert water at a rate and quantity within the specified limits that are reasonable and beneficial:

Table 5. Recommended Limits and Location

Maximum Instantaneous Rate (cfs)	0.05
Maximum Annual Quantity (ac-ft/yr)	0.5
Purpose(s) of Use	Single Domestic
Point of diversion	NW ¼ SW ¼, Section 09, Township 28 N., Range 21 E.W.M.
Place of Use	See legal description on page 1 and map on Attachment A



Adam Neff – RH2 Engineering, Inc.

5/6/2022

Date



Candis Graff – Department of Ecology

5/6/2022

Date

To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

References

Aspect Consulting, LLC, July 25, 2013, Lake Chelan Water Right Permitting Options, prepared for Chelan County Department of Natural Resources.

Montgomery Water Group, Inc., Adolfson Associates, Inc., Hong West & Associates, Inc., R2 Resource Consultants, Inc., Marshall and Associates, Inc., and Washington Department of Ecology, June 8, 1995, Draft Initial Watershed Assessment Water Resources Inventory Area 47 Chelan Watershed. Open File Technical report 95-13.

Orr, L.A., Bauer H.H., and Wayenberg, J.A., 2002, Estimates of Ground-water Recharge from Precipitation to Glacial-Deposit and Bedrock Aquifers on Lopez, San Juan, Orcas, and Shaw Islands, San Juan County, Washington, United States Department of the Interior, Geological Survey, Water-Resources Investigations Report 02-4114.

RH2 Engineering, Inc., October 2014, Final Review Draft WRIA 47 Lake Chelan Detailed Implementation Plan.

RH2 Engineering, Inc., April 30, 2014, Lake Chelan Watershed Reserve Accounting Analysis, prepared for Chelan County Department of Natural Resources.

RH2 Engineering, Inc., June 2012, FINAL Lake Chelan Watershed Plan (WRIA 47), prepared for WRIA 47 – Lake Chelan Watershed Planning Unit.

RH2 Engineering, Inc., December 2009, Phase II Water Quality Assessment, WRIA 47 (Lake Chelan), Prepared for Chelan County Natural Resources Department, Wenatchee, Washington.

Sorlie, G. and Milhous, R.T., June 1975, The Water Resources of the Chelan Basin, Water Resources Analysis and Information Section, Washington State Department of Ecology, Open-File Technical Report 75-03.

U.S. Geological Survey, 2020, National Water Information System data available on the World Wide Web. USGS Water-Year Summary 2018. 12452500 Chelan River at Chelan, WA. Accessed at: https://waterdata.usgs.gov/nwis/wys_rpt?dv ts ids=149827&wys water yr=2018&site no=12452500 &agency cd=USGS&adr water years=2006%2C2007%2C2008%2C2009%2C2010%2C2011%2C2012%2C2013%2C2014%2C2015%2C2016%2C2017%2C2018&referred module=

Washington State Department of Ecology, September 2017, Focus on: Lake Chelan Reserve, Publication No. 17-11-009.

Washington State Department of Ecology and Public Utility District No. 1 of Chelan County, September 22, 2017, First Amendment to Agreement Concerning Water Right Certificate No. 319.

Washington State Department of Ecology and Public Utility District No. 1 of Chelan County, April 29, 1992, Agreement Concerning Water Right Certificate No. 319.

