



State of Washington REPORT OF EXAMINATION FOR TRUST WATER RIGHT

Changed Place of Use
Changed Purpose of Use

PRIORITY DATE June 5, 1886	WATER RIGHT NUMBER CS4-01279sb5c	BEGIN TRUST TERM Upon approval	END TRUST TERM Permanent
WATER RIGHT OWNER FRED TALERICO 1711 STATE ROUTE 970 CLE ELUM WA 98922			
APPLICANT/AGENT FOR OWNER CENTRAL CASCADES LAND CO C/O ANNE WATANABE PO BOX 687 ROSLYN WA 98941			

Purpose and Quantity

Trust water right for the purpose of instream flow and water banking to offset the consumptive use associated with new groundwater uses in the Yakima Basin, with quantities allocated to primary and second reaches in the following manner.

Period	Primary Reach		Secondary Reach	
	Flow (cfs)	Acre-feet	Flow (cfs)	Acre-feet
06/01 -06/30	0.11		0.02	1.10
07/01 -07/31	0.11		0.04	2.10
08/01 -08/31	0.11		0.03	1.60
09/01 -09/30	0.11		0.02	1.20
ANNUAL TOTAL		18.36		6.00

“Primary reach” means that portion of a water body that benefits from both the former consumptive use and former return flow waters of a water right. “Secondary reach” means that portion of a water body that benefits only from the former consumptive portion of a water right.

Trust Water Right Place of Use

WATERBODY	TRIBUTARY TO	COUNTY				WATER RESOURCE INVENTORY AREA			
Yakima River	Columbia River	Kittitas				39-Upper Yakima			
REACH	WATERBODY	RIVER MI	TWN	RNG	SEC	QQ Q	LATITUDE	LONGITUDE	
Begin Primary Reach	Yakima River	181.8	20N	15E	35	NWNE	47.1877	-120.9270	
End Primary Reach	Yakima River	176.1	19N	16E	3	NWSW	47.1673	-120.8352	
Begin Secondary Reach	Yakima River	176.1	19N	16E	3	NWSW	47.1673	-120.8352	
End Secondary Reach	Yakima River	0.0	24N	9E	28		46.2493	-119.2451	

Latitude/Longitude Coordinates may approximate reach segments. Datum: NAD83/WGS84

Trust Water Right Provisions

The real property to which the water rights were originally appurtenant shall not be irrigated from any source of supply unless and until another valid water right is transferred to the place of use.

This decision may indicate a Real Estate Excise Tax liability for the seller of water rights. The Department of Revenue has requested notification of potentially taxable water right related actions, and therefore will be given notice of this decision, including document copies. Please contact the state Department of Revenue to obtain specific requirements for your project. Phone: (360) 570-3265. The mailing address is: Department of Revenue, Real Estate Excise Tax, PO Box 47477, Olympia WA 98504-7477 Internet: <http://dor.wa.gov/>. E-mail: REETSP@DOR.WA.GOV.

Findings of Facts and Decisions

Upon reviewing the investigator's report, I find all facts relevant and material to the subject application have been thoroughly investigated. Furthermore, I find the change of water right as recommended will not impair existing rights or detrimental to the public interest.

Therefore, I ORDER the requested change of place and purpose of use under Trust Water Right Application No. CS4-01279sb5c, be approved subject to existing rights and the provisions specified above.

Your Right To Appeal

This Decision may be appealed pursuant to RCW 34.05.514(3), RCW 90.03.210(2), and Pretrial Order No. 12 entered in *State of Washington, Department of Ecology v. James Acquavella, et al.*, Yakima County Superior Court No. 77-2-01484-5 (the general adjudication of surface water rights in the Yakima River Basin). The person to whom this Decision is issued, if he or she wishes to file an appeal, must file the notice of appeal with the Yakima County Superior Court **within thirty (30) days of receipt of this Decision**. Appeals must be filed with the Superior Court Clerk's Office, Yakima County Superior Court, 128 North 2nd Street, Yakima WA 98901, RE: Yakima River Adjudication. Appeals must be served in accordance with Pretrial Order No. 12, Section III ("Appeals Procedures"). The content of the notice of appeal must conform to RCW 34.05.546. Specifically, the notice of appeal must include:

- The name and mailing address of the appellant;
- Name and address of the appellant's attorney, if any;
- The name and address of the Department of Ecology;
- The specific application number of the decision being appealed;
- A copy of the decision;
- A brief explanation of Ecology's decision;
- Identification of persons who were parties in any adjudicative proceedings that led to Ecology's decision;
- Facts that demonstrate the appellant is entitled to obtain judicial review;
- The appellant's reasons for believing that relief should be granted; and
- A request for relief, specifying the type and extent of relief requested.

The “parties of record” who must be served with copies of the notice of appeal under RCW 34.05.542(3) are limited to the applicant of the decision subject to appeal, Ecology and the Office of the Attorney General.

All others receiving notice of this Decision, who wish to file an appeal, must file the appeal with the Yakima County Superior Court within **thirty (30) days of the date the Order was mailed**. The appeal must be filed in the same manner as described above.

Signed at Yakima, Washington, this _____ day of _____, 2011.

Robert F. Barwin, Acting Section Manager
Water Resources Program/CRO
Department of Ecology

DRAFT

BACKGROUND

Description and Purpose of the Proposed Change

On February 17, 2011, Central Cascades Land Company, Inc. filed an application to enter an adjudicated water right into the Trust Water Right Program. The subject right is Claim No. 01279 in the Yakima Superior Court matter of the *State Department of Ecology v. James J. Acquavella, et al (Acquavella)*, within Subbasin No. 5 (Elk Heights). The application for change was accepted and assigned Control No. CS4-01279sb5c.

This report of examination addresses the applicant's request to transfer 0.11 cubic feet per second (cfs) and 21 acre-feet per year (ac-ft/yr) to the Trust Water Right Program (TWRP) for instream flow and water banking purposes to mitigate for new withdrawals of groundwater in accordance with WAC 173-539A.

The historical place of use is approximately two miles east of Cle Elum, in Kittitas County. The physical address of the property is 1711 State Route 970. Upon approval of the requested change, the subject water right will no longer be used on the property.

Attributes of the Existing Water Right and Proposed Change

Attributes	Existing Right	Proposed Change
Right Holder's Name	Fred S. Talerico	Trust Water Right Program
Applicant	Central Cascades Land Company, Inc.	
Priority Date	June 5, 1886	Same
Source	Yakima River (Younger Ditch)	Yakima River
Purpose of Use	Irrigation supply (sprinkler and flood)	Instream flow & water banking to offset the consumptive use associated with new groundwater uses in the Yakima Basin
Instantaneous Quantity	0.11 cfs (and 0.125 cfs for conveyance loss)	Primary Reach: 0.11 cfs Secondary Reach: June - 0.02 cfs July - 0.04 cfs August - 0.03 cfs September - 0.02 cfs
Annual Quantity	21.0 ac-ft/yr	21.0 ac-ft/yr of which 6.0 ac-ft/yr is consumptive use
Period of Use	April 20 - September 30	June 1 - September 30
Place of Use	Beginning at the north quarter corner of Section 31, T. 20 N., R 16 E., W.M.; thence East along the north section line of said Section 31, 305 feet; thence South 0° 32' 39" West 487.70 feet to the true point of beginning; thence continuing South 0° 32' 39" West 218.36 feet; thence South 89° 47' 15" West 787.79 feet; thence North 0° 32' 19" East 334.32 feet; thence South 81° 48' 57" East 794.88 feet to the point of beginning (parcel No. 155035)	Yakima River Primary Reach: River Mile (RM)181.8 to RM 176.1 Secondary Reach: RM 176.1 to the confluence with the Columbia River

Legal Requirements for the Proposed Change

RCW 90.03.380(1) states that a water right that has been put to beneficial use may be changed. The point of diversion, place of use, and purpose of use may be changed if it would not result in harm or injury to other water rights.

A trust water right in the Yakima Basin is governed by RCW 90.38, and water banking is governed by RCW 90.42.100. RCW 90.38.040(1) states that all trust water rights acquired by the Department of Ecology shall be placed in the Yakima River Basin Trust Water Right Program to be managed by Ecology. Ecology shall issue a Certificate of Water Right in the name of the State of Washington for each trust water right it acquires.

The Washington State Supreme Court held that Ecology must make a tentative determination of the extent and validity of the right to be changed (*R. D. Merrill v. PCHB and Okanagan Wilderness League v. Town of Twisp*).

This application qualifies for priority processing under WAC 173-152-050(2)(c) whereby water right change applications may be processed prior to applications submitted at an earlier date when the proposed water use, if approved, would substantially enhance or protect the quality of the natural environment. In the context of water banking under the Upper Kittitas County ground water rule, WAC 173-539A-060 provides that Ecology may process a pending application to place a water right in trust if and such trust water right would have an equal or greater contribution to flow during the irrigation season, as measured on the Yakima River at Parker that would serve to mitigate the proposed use. The trust water right must have priority earlier than May 10, 1905, and be eligible to be used for instream flow protection and mitigation of out-of-priority uses.

Public Notice

A public notice of the application must be published in a local newspaper once a week for two consecutive weeks (RCW 90.03.280). Public notice of the subject application was published in the Ellensburg *Daily Record* on April 20 and 27, 2011.

State Environmental Policy Act (SEPA)

A water right application is subject to a SEPA threshold determination (i.e., an evaluation whether there are likely to be significant adverse environmental impacts) if any one of the following conditions are met.

- (1) It is a surface water right application for more than 1 cubic feet per second, unless that project is for agricultural irrigation, in which case the threshold is increased to 50 cubic feet per second, so long as that irrigation project will not receive public subsidies.
- (2) It is a groundwater right application for more than 2,250 gallons per minute.
- (3) It is an application that, in combination with other water right applications for the same project, collectively exceeds the amounts above.
- (4) 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).
- (5) 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.

Because this application does not meet any of these conditions, it is categorically exempt from SEPA and a threshold determination is not required.

INVESTIGATION

In considering this application, the investigation included, but was not limited to, research and/or review of:

- Yakima County Superior Court *Acquavella* Court Claim No. 01279
- Yakima County Superior Court Conditional Final Order Subbasin No. 5 (Elk Heights)
- Yakima County Superior Court Report of Referee Subbasin No. 5 (Elk Heights)
- Yakima County Superior Court Supplemental Report of Referee Subbasin No. 5 (Elk Heights)
- Younger Ditch Easement and Agreement
- Water Right Change Application No. CS4-01279CTCL@1 (KITT-05-01) and associated documents including Kittitas County Water Conservancy Board Report of Examination and Record of Decision dated October 18, 2005; and Report of Examination and Record of Decision dated June 20, 2006; Letter dated December 13, 2005, from Daniel Haller (DOE) to Chery Varnum (Kittitas County Water Conservancy Board); Letter dated August 23, 2006, from Thomas Tebb (DOE) to Rogalski-Walgren Inc.
- Adjacent water rights and Court Claims in the vicinity including information from Water Right Change Application CS4-05671CTCLsb5@3 (KITT-08-02) and associated documents
- Affidavit of Fred S. Talerico
- Deeds
- Dated Aerial Photos (2001-2006, 2009) and Landsat Images (2003-2009)

- Soils Map
- Photos of the irrigation delivery system and appurtenant property
- Water and Natural Resource Group Technical Memorandum on Beneficial Use and Consumptive Use Calculations
- Draft Trust Water Agreement between Ecology and Yakima River Mitigation Water Services LLC
- Ecology Records
- Correspondence and communication with water right holder Fred S. Talerico and Ecology staff
- State Water Code, administrative rules, regulations and policies

History of Water Use

Fred S. Talerico was confirmed a water right with a priority date of June 5, 1886, under Court Claim No. 01279 in the Conditional Final Order (CFO) for Subbasin No. 5 (Elk Heights) issued on February 8, 2001, by the Yakima County Superior Court in *Acquavella*. The CFO confirmed the right with the following attributes:

- Diversion of 0.11 cfs and 21 ac-ft/yr from Younger Ditch (Yakima River) for the irrigation of 3.5 acres from April 20 through September 30 of each year, with 0.125 cfs for conveyance loss.

The *Acquavella* Supplemental Report of Referee stated that Court Claim No. 01279 was filed by GRM Ranch in 1981; and that Mr. Talerico purchased Tract A of the GRM property in 1973 and the adjacent Tract B of the GRM property in 1976. Tract A is adjacent to and north of Tract B and was sold to Mr. Talerico's parents, Frank and Doris Talerico; and is the real property to which the adjacent Court Claim No. 05671 was historically appurtenant.¹

Tract B of the GRM property is 5 acres in size and is the real property to which the subject water right, as confirmed to Mr. Talerico under Claim No. 01279, is appurtenant. Mr. Talerico indicated that he has irrigated this land since 1976. Mr. Talerico was joined as a party to Claim No. 01279 on May 26, 1998. The February 8, 2001, CFO for Subbasin 5 (Elk Heights) confirmed Mr. Talerico's Court Claim (No. 01279) to irrigate 3.5 of the 5.0 acres with 0.11 cfs and 21 ac-ft/yr of Yakima River water diverted through the Younger Ditch.

¹ The water rights confirmed under Claim No. 05671 were placed into the TWRP under Temporary Trust Water Right No. CS4-05671CTCL@1 in June 2006 for the 2006 irrigation season and remained in the trust program until 2010, when a temporary beneficial use was authorized by Yakima County Superior Court Order Pendente Lite dated September 9, 2010. Since 2006, the land appurtenant to Claim No. 05671 has been fallow.

During the proceedings for Subbasin 5 and other Younger Ditch users, Ecology expressed a concern that relinquishment or temporary nonuse of individual water rights over time could diminish the conveyance water in Younger Ditch to a point where the remaining users of the ditch could not obtain their authorized water. As such, the Referee incorporated into each of the recommended Younger Ditch water rights, including Claim No. 01279, the following provision:

In the event this water right is relinquished, or otherwise not used, the proportionate share of conveyance loss associated with this right shall revert to the remaining Younger Ditch water right holders whose certificates include a discreet quantity of water for the purpose of conveyance. The reversion of this quantity of water shall be to the extent necessary to deliver the authorized quantity of water to the remaining authorized places of use. The maximum quantity of water affirmed for the entire length of the ditch for the purpose of conveyance is 2.895 cubic feet per second (cfs).

Court Claim No. 01279 includes a quantity of 0.125 cfs for conveyance loss which will revert accordingly to the remaining Younger Ditch water right holders as a result of this change application.

The Supplemental Report of Referee also concluded that stock animals on the property drink from an excavated pond or a small stream entering the property from the west; and therefore Claim No. 01279 has a non-diversionary stock water right and is subject to the non-diversionary stock water stipulation described in the Report of Referee.²

² The parties stipulated to the following in relation to "non-diversionary" stock and wildlife watering use with regards to Subbasin No.5: "1) Waters in natural watercourses in the subbasin shall be retained when naturally available, in an amount not to exceed 0.25 cubic feet per second (cfs), for stock water uses in such watercourses as they flow across or are adjacent to lands, which are now used as pasture or range for livestock. Retention of such water shall be deemed senior (or first) in priority, regardless of other rights confirmed in this cause. Regulations of these watercourses by the plaintiff shall be consistent with such retention requirements. 2) Waters in natural watercourses in the subbasin shall be retained when naturally available, in an amount not to exceed 0.25 cfs, for wildlife watering uses in such watercourses as they flow across or are adjacent to lands, which are now used as pasture or range for wildlife. Retention of such water shall be deemed senior (or first) in priority, regardless of other rights confirmed in this cause. Regulations of these watercourses by the plaintiff shall be consistent with such retention requirements. 3) Waters in naturally occurring ponds and springs (with no surface connection to a stream) in the subbasin shall be retained for stock water uses, when such ponds and springs are located on or adjacent to lands which are now used as pasture or range for livestock. Said uses embody entitlements to a level in the water bodies sufficient to provide water for animals drinking directly therefrom while ranging on riparian lands, and with the same priority as provided in paragraph 1. Regulation of the ponds and springs by the plaintiff shall be consistent with such retention requirements. 4) Waters in naturally occurring ponds and springs (with no surface connection to a stream) in the subbasin shall be retained for wildlife watering uses, when such ponds and springs are located on or adjacent to lands which are now used as pasture or range for wildlife. Said uses embody entitlements to a level in the water bodies sufficient to provide water for wildlife drinking directly therefrom while ranging on riparian lands, and with the same priority as provided in paragraph 2. Regulation of the ponds and springs by the plaintiff shall be consistent with such retention requirements. 5) Nothing in this stipulation mandates that any lands, associated with water rights or water retention as provided herein, shall be reserved for wildlife purposes."

This claim was previously the subject of Water Right Change Application No. CS4-01279CTCL@1 (KIT-05-01) submitted to the Kittitas County Water Conservancy Board (KCWCB) by applicant Rogalski-Wallgren, Inc., to change a portion of Claim No. 01279 to a new point of withdrawal, add a new place of use and change the purpose of use of the portion transferred from irrigation to domestic supply and irrigation. The new point of withdrawal was to be a shallow groundwater well in hydraulic continuity with the Yakima River. On October 18, 2005, the KCWCB issued a Report of Examination (ROE) and Record of Decision (ROD) recommending that Ecology approve Change Application No. CS4-01279CTCL@1 (KIT-05-01) for a quantity of 0.05 cfs and 10 ac-ft/yr (6.79 ac-ft/yr consumptive and 3.21 ac-ft/yr for non-consumptive).

By letter dated December 13, 2005, from Daniel Haller (Ecology) to Chery Varnum (KCWCB), Ecology recommended that the KCWCB withdraw its October 18, 2005, decision to supplement the record. The KCWCB withdrew its decision and issued another ROD and ROE on June 20, 2006. By letter dated August 23, 2006, from Thomas Tebb (Ecology) to Rogalski-Walgrén Inc., Ecology reversed and denied the KCWCB's June 20, 2006 decision, indicating that Ecology's review time had expired before inadequacies with the KCWCB's evaluation could be addressed. Many of Ecology's concerns with the KCWCB's 2005 and 2006 decisions related to the new proposed use and new point of withdrawal specific to that change application. Other issues pertained to the extent and validity of Mr. Talerico's beneficial use of Claim No. 01279. No parties appealed Ecology's 2006 decision and the water under Claim No. 01279 remained appurtenant to Mr. Talerico's property.

In support of this change request, Gene St. Godard of the Water and Natural Resources Group, Inc. (WNR Group) completed (in October 2010) a Technical Memorandum of the Consumptive Use Analysis for Claim No. 01279. Mr. St. Godard has done several site visits over the past two years and has observed the historic point of diversion from Younger Ditch, the irrigation delivery system, property features, and stock animal use.

Mr. Talerico has primarily irrigated his property for pasture/turf for stock animals. The stock animals are enclosed in the area in which the irrigation occurs. Since at least 1999, Mr. Talerico has had an average of 2-4 horses on the property.

The existing irrigation system consists of both gravity-flow flood irrigation and sprinkler systems. Approximately two acres of the property are irrigated via a gravity flow diversion consisting of a 3-inch, 75-foot plastic pipe placed directly into the Younger Ditch. This pipe is connected to a one-inch plastic pipe that flood irrigates the western portion and the northeastern portion of the property. The sprinkler irrigation consists of a one-horsepower pump which withdraws water from Younger Ditch into a 300-foot, 1.5-inch diameter pipe. This pipe has seven to eight sprinkler nozzles, with only five used at any one time. In addition, a 100-foot garden hose is attached to the end of the 1.5-inch pipe, which also operated five Rainbird sprinklers.

The porous sands and gravels at the site result in increased rate of return flows to the shallow aquifer, thus requiring more water to be applied to the crop in order to meet the irrigation requirements. The site is underlain by Patnish-Mippon-Myzel complex soils (Map unit 208 in Kittitas NRCS Soil Survey, 2010). These soils are typically found in flood plains and form a 0 to 3 percent slope. The soils are listed as moderately well-drained and have a moderately high to high capacity to transmit water (0.57 to 1.98 inches per hour). Their available water holding capacity is very low (about 1.9 inches). These soil conditions require a large water duty to irrigate the lands for pasture.

On-site conditions and aerial photos for the years 2001-2006 and 2009 confirmed that Court Claim No. 01279 was exercised during each of these years. The adjacent property that was appurtenant to Court Claim 05671 and which is north of the Talerico property appears in the same aerial photos. Because of temporary changes (to trust) made to Claim No. 05671, the land previously appurtenant to Claim No. 05671 has not been irrigated since 2006 and has remained fallow. As such, the fallowed adjacent property offered a good visual comparison to Mr. Talerico's property, which has been irrigated during those same years.

In 2010, Mr. Talerico recorded the Younger Short Plat (Kittitas County File No. P-07-63) which subdivided his 5-acre parcel into five 1-acre lots. At the time, Mr. Talerico owned all 5 acres. His residence is located on what is now Lot 1 of the Younger Plat.

Up until the 2011 irrigation season, Mr. Talerico irrigated his 3.5 acres of pasture/turf by diverting from Younger Ditch, which receives its water from the Yakima River. In February 2011, Mr. Talerico, through his authorized agent Central Cascades Land Company, Inc., applied to place all of Claim No. 01279 into Ecology's Trust Water Rights Program for instream flows and water banking.

On July 8, 2011, Central Cascades Land Company took ownership of all 5 acres of the Talerico property, however Mr. Talerico continues to reside on Lot 1.

Proposed Use

The applicant proposes to change the rights confirmed to Fred Talerico under Court Claim No. 01279 to the Trust Water Right Program for the purpose of instream flow use and for water banking to offset the consumptive use associated with new groundwater uses, in accordance with WAC 173-539A, and the Trust Water Right Agreement between Ecology and Yakima River Mitigation Water Services LLC.

Other Rights Appurtenant to the Existing Place of Use

A review of Ecology's Water Rights Tracking System (WRTS) database did not reveal any other rights or claims which are appurtenant to the place of use for Claim No. 01279. However, there is a permit exempt ground water use for domestic purposes established on Lot 1. The well was drilled in 1994 when the home was built. The well is identified by the applicant as well log ID # 114742 (which the driller likely misidentified as being in section 32 vs. 31 where Lot 1 is located).

Proposed Trust Water Right Place of Use

The proposed place of use for the trust water right is instream in the primary and secondary reaches. The primary reach is the portion of a water body that benefits from both the former consumptive use and return flow waters of the trust water right and is the reach between the original point of diversion and the point where the last return flows re-enter the stream or river. The secondary reach is that portion of a water body that benefits from the former consumptive portion of a trust water right because it had received return flow waters while the water right was exercised. The secondary reach is located downstream from the point where return flows from the historic use under the water right re-entered the stream or river.

Primary Reach

The primary reach begins at the historic point of diversion on the Yakima River (River Mile 181.8) that is approximately 750 feet south and 1150 feet east of the north quarter corner of Section 35, being within the SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 35, Township 20 North, Range 15 East, W. M., and ends at a point (River Mile 176.1) approximately 264 feet east and 133 feet south of the west quarter corner of Section 3, being within the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 3, Township 19 North, Range 16 East, W. M.

Secondary Reach

The secondary reach begins at a point (River Mile 176.1) approximately 264 feet east and 133 feet south of the west quarter corner of Section 3, being within the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 3, Township 19 North, Range 16 East, W. M., and continues past the confluence of the Yakima River and Teanaway River and continues down the Yakima River to its confluence with the Columbia River.

Trust Water Right Calculations

Gene St. Godard with the WNR Group completed a technical analysis of the extent and validity and consumptive use quantities of Claim No. 01279. The WNR Group used several methodologies to calculate the crop irrigation requirements (CIR), and total irrigation requirement (TIR) of the property.

Methodologies included using the Washington Irrigation Guide (WIG) and Ecology Guidance/Policy 1210, and the Blaney-Criddle Method, which is a temperature and precipitation-based method. Pasture/turf was used as the crop grown for all the methodologies. Temperature, precipitation and other lookup values were used for the town of Cle Elum located approximately two (2) miles northwest of the Talerico property (Western Climate Center Station No. 451504). Due to incomplete data at the Cle Elum station, the WNR Group did a comparison of values to the Ellensburg station (Western Climate Center Station No. 452505) for the years 2006-2009.

Washington Irrigation Guide (WIG) Method

The Washington Irrigation Guide (USDA, 1990) was developed for use in estimating historic crop water use requirements. The WIG provides technical information and procedures that can be used for planning and management of irrigation systems as well as developing quantities of crop consumptive use for various areas throughout Washington State (Appendix A of WIG). The crop use requirements are derived from a modified Blaney-Criddle method and generally use historical rainfall and precipitation data prior to 1980. The guide provides net irrigation requirements, based on long-term average climate conditions, for various crops and locations throughout the state. WNR Group notes that this data may not be truly representative of recent trends in decreased precipitation and higher temperatures, but can be used as an average crop requirement from long-term historical precipitation and temperature records. The basic inputs to the modified Blaney-Criddle method include mean monthly temperature, precipitation, and latitude.

For the Talerico property, WIG numbers were used for the area near Cle Elum, Washington. Crop irrigation requirements were used for pasture/turf, at latitude of 47.18. The irrigation season is documented beginning on June 3 and ending October 7. The following numbers were presented in the WIG:

TABLE 1: PASTURE/TURF NEAR CLE ELUM, WASHINTON

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Mean Temp °F	26.3	32.9	37.3	44.6	52.5	59.3	66.0	64.6	56.9	46.6	35.7	29.9	
Total Precip (in)	4.14	2.46	1.91	1.27	0.77	0.70	0.27	0.59	0.81	1.63	3.51	4.59	22.65
Effective Precip (in)	0.00	0.03	0.64	0.80	0.54	0.51	0.23	0.46	0.57	0.94	0.00	0.00	4.72
Crop Requirement	0.00	0.00	0.00	0.00	0.00	3.34	6.50	4.79	3.47	0.00	0.00	0.00	18.11

TABLE 1A: PASTURE/TURF NEAR CLE ELUM, WASHINGTON (Including Blaney-Criddle numbers for April and May)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
0.00	0.00	0.00	0.73	1.16	3.34	6.50	4.79	3.47	0.00	0.00	0.00	20.00

As shown in Table 1, the net irrigation requirements for pasture/turf near Cle Elum, Washington, is 18.11 inches (1.51 feet) per acre of land (5.29 acre feet for 3.5 acres). The Talerico water right allows for irrigation from April 20 through September 30 of each year. The WIG does not credit any pasture/turf irrigation requirement for April or May.

Evaporation from the irrigation system is a documented consumptive use. For handline irrigation, an assumed evaporation rate of ten (10) percent is given (Ecology Guid-1210, 2005). Utilizing this guidance, the total consumptive use (Cu) for pasture/turf on the Talerico property, as determined by the WIG numbers is 5.82 acre feet.

Many farmers irrigate during April and May in the Cle Elum area. The WNR Group did additional Blaney-Criddle calculations for this project (and are discussed below), which showed an irrigation requirement for these months.

As shown in Table 1A, the net irrigation requirements for pasture/turf near Cle Elum, Washington is 20.0 inches (1.67 feet) per acre of land, when values are added for the months of April and May, or 5.83 acre-feet for the property. For handline irrigation, an assumed evaporation rate of ten (10) percent is given (Ecology Guid-1210, 2005). Utilizing this guidance, the total consumptive use (Cu) for pasture/turf on the Talerico property, as determined by the WIG and Blaney-Criddle numbers for the irrigation season of April 20 through September 30 is 6.42 acre feet.

Blaney-Criddle Method

The Blaney-Criddle Method (Shulz, 1989) was used by the WNR Group to estimate the Cu of the Talerico property. The Blaney-Criddle Method calculates Cu as the product of crop use coefficient (K) and consumptive use factor (F). WNR Group's calculations associated with the Blaney-Criddle Method used the following data:

- Mean monthly air temperature and mean monthly precipitation. These values were obtained from the Western Regional Climate Center web site (www.wrcc.dri.edu) for the Cle Elum, Washington station No. 451504 (updated 8/27/10). The period of record within the data base was 1931 to 2009; however data was incomplete for 2005 to 2009. Weather data was also reviewed for the Ellensburg, Washington station No. 452505 (updated 8/27/10). The period of record for this station was from 1931 through July 2010.
- Yearly monthly air temperature and mean monthly precipitation were also calculated for each of the individual years from 2000 to 2009. These values were obtained from the Western Regional Climate Center web site (www.wrcc.dri.edu) for the Cle Elum, Washington station No. 451504 and Ellensburg station No. 452505 (updated 8/29/10).
- Percent of annual daytime hours occurring for each month, which was estimated from data presented in Jensen et. al. (1969) for northern latitudes of 46 to 49 degrees. Estimation for daytime hours at latitude 47.1 was used for this analysis.
- Monthly Crop Use Coefficients, which were adapted from typical coefficients for pasture/turf crops grown in Western United States, such as those presented in Schulz (1989).
- Consumptive use calculations per acre include the amount of water required for the crops plus 5% for evaporation from the handline irrigation system.

Table 2 presents the WNR Group’s inputs and calculated results for determination of consumptive use of pasture/turf in accordance with the Blaney-Criddle Method using data from the Cle Elum station No. 451504. This table utilizes the long-term average climate conditions from 1931 to 2006, for temperature and precipitation, plus the average irrigation system evaporation (5%). Based on the inputs, the WNR Group calculated that the Cu at the Talerico property for pasture/turf is 24.71 inches (or 2.06 feet) per acre of land. Irrigation of 3.5 acres would result in an annual crop net consumptive use of 7.57 acre-feet per year, including the 5% irrigation system evaporation. The Cle Elum Station did not have continuous data from 2005 through 2009, the period of evaluation for this review.

The Blaney-Criddle method was used for precipitation and temperature data for each year between 2000 and 2004. The calculated results for consumptive use of pasture/turf crops (plus irrigation system evaporation) for the Talerico property are summarized below.

Year	Crop Consumptive Use Value in feet per acre	Total Crop Cu plus 5% system evaporation in ac-ft/yr
2000	1.884	6.93
2001	2.145	7.88
2002	2.083	7.65
2003	2.034	7.47
2004	1.931	7.10

WNR Group notes that there is no consistent temperature and precipitation data for the Cle Elum station from 2005 through 2009. There is, however, consistent data for the Ellensburg station for this time period. In order to estimate a crop consumptive use value using more current temperature and precipitation data as determined by the Blaney-Criddle method, WNR Group used the data for the Ellensburg station and applied a weighted value for Cle Elum using the Blaney-Criddle Method. Table 3 below summarizes these results.

In order to develop a consumptive use value for the Cle Elum area, WNR Group compared the complete data set for both the Cle Elum and Ellensburg stations from 2000 through 2004. The percent difference from the Ellensburg station for the years from 2000 through 2004 ranged from 1.076 to 1.274 times higher than the Cle Elum station, resulting in an average multiplier of 1.187 over the 5-year period. Utilizing this average multiplier, the most recent data was used from 2005 through 2009 at the Ellensburg station and was calculated using the Blaney-Criddle Method then divided by 1.187, resulting in an average annual consumptive use value for pasture turf in the Cle Elum area over an April 20 through September 30 irrigation season.

TABLE 3-SUMMARY: Summary of Pasture/Turf Crop Consumptive Use for the Years 2000 through 2009 for the Talerico Property.			
<i>Year</i>	<i>Ellensburg Station</i>	<i>Cle Elum Station</i>	<i>Percent Difference</i>
2000	8.83	6.93	1.274
2001	8.48	7.88	1.076
2002	8.73	7.65	1.141
2003	9.08	7.47	1.216
2004	8.71	7.10	1.227
2005	8.59	7.238	1.187
2006	8.69	7.322	1.187
2007	8.75	7.373	1.187
2008	8.77	7.390	1.187
2009	9.28	7.819	1.187
Station History (1)	8.48	7.570	1.120
(1) Station history is for 1931-2006 for Cle Elum and 1931-2009 for Ellensburg.			

Summary of Consumptive Use Analysis

The following conclusions were determined from the consumptive use analysis and are summarized in Table 4.

TABLE 4: SUMMARY OF CONSUMPTIVE USE VALUES	
Methodology	Net Consumptive Use Value in ac-ft/yr
WIG	5.29
WIG + Blaney-Criddle for April & May	5.83
Ecology Procedure 1210 w/ WIG Evap-10%	5.82
Ecology Procedure 1210 for April-Sept.	6.42
Blaney-Criddle (long term 1931-2006) for Cle Elum	7.57
Blaney-Criddle (long term 1931-2009) for Ellensburg	8.48
Blaney-Criddle (maximum year Cle Elum 2009)	7.82

Actual Water Use/Total Irrigation Requirement Analysis

The electrical system at the site operates multiple components, including Mr. Talerico's residence. Therefore, using power records to determine water usage was not practical. So, an estimation of water use (total site irrigation requirement) was calculated using the Washington State Department of Ecology Guidance 1210. Table 1 (page 8 of Guid-1210) was used to estimate irrigation efficiencies, and the consumptive use value of 2.234 feet/acre as determined from the Blaney-Criddle method (highest year – 2009) was used.

For the flood irrigation portion of the property, the following data was used:

Cu = 2.234 ft/acre
Irrigable Area = 2.0 acres
Irrigation Efficiency = 35%

Estimated total irrigation requirement is: $2.234 \text{ ft/acre} \div 0.35 \times 2.0 \text{ acres}$, or 12.77 ac-ft/yr.

For the sprinkler irrigated portion of the property, the following data was used:

Cu = 2.234 ft/acre
Irrigable Area = 1.5 acres
Irrigation Efficiency = 60%

Estimated total irrigation requirement is: $2.234 \text{ ft/acre} \div 0.60 \times 1.5 \text{ acres}$, or 5.59 ac-ft/yr.

Therefore, the total irrigation requirement, or actual water use on the 3.5 acres of pasture/turf on the property is 18.36 ac-ft/yr

Conclusion of Total Consumptive Use for the Proposed Change

Using Guidance 1210, the property owner has put approximately 87% of the full quantity of the certificate (21 ac-ft/yr) to beneficial use. The crop irrigation requirement was determined over the past 5-year period using a weighted average of the Blaney-Criddle method from the Ellensburg station to the Cle Elum area. Based on the various methodologies used to calculate the consumptive use quantity, Ecology has determined that the total irrigation requirement, or actual water use on the 3.5 acres of pasture/turf on the property is 18.36 ac-ft/yr and the consumptive use quantity is 6.0 ac-ft/yr, and is therefore available for transfer into the Trust Water Right Program for instream flows and banking.

Site soil conditions and the low irrigation efficiency of the gravity flow and sprinkler systems are assumed to account for the extra water diverted over the values identified in the consumptive use analysis done by the WNR Group. The porous sands and gravels at the site result in an increased rate of return flows to the shallow aquifer, thus requiring more water to be applied to the crop in order to meet the crop irrigation requirements.

The monthly instream flows in the secondary reach were determined on a month to month basis as average cfs and total acre-feet of consumptive use. Monthly consumptive use of acre-feet for irrigation was determined by allocating the 6.0 ac-ft/yr of total consumptive use proportionally throughout the irrigation season based on the monthly crop requirements presented in the WIG as follows: 18.4% in June, 36% in July, 26.4% in August, and 20% in September. The total amount of consumptive use each month was converted to cfs to obtain the average monthly instantaneous quantity used to augment instream flow along the secondary reach. Table 5 below shows the average and total monthly consumptive use quantities.

Table 5: Summary of Instream Flow in the Secondary Reach

	June	July	August	Sept.	Total
Average Qi (cfs)	0.02	0.04	0.03	0.02	-----
Qa (ac-ft/yr)	1.1	2.1	1.6	1.2	6

Trust Water Right Management

The consumptive use portion of the subject right is being changed to instream flow for water banking purposes. As a condition of placing these water rights into the Trust Water Right Program, the water placed into trust may be available as mitigation to address the issue of, and prevent, third-party impairment with respect to new out-of-priority water rights consistent with WAC 173-539A. The details can be viewed in the Trust Water Right Agreement between Yakima River Mitigation Water Services LLC and the Washington State Department of Ecology (attached).

When any portion of this trust water is available and not being used for water banking or other authorized purposes, those quantities will be added to the instream target flows managed by the U.S. Bureau of Reclamation at Parker and continue downstream to the Yakima River’s confluence with the Columbia River. If the water is used to offset consumptive use by new water users purchasing mitigation credits from the Yakima River Mitigation Exchange, or any other new use to be mitigated by the subject right, then the trust water right will NOT be added to the instream target flows at Parker.

LEGAL EVALUATIONS

Impairment Considerations

Under RCW 90.38.040(5)(a), a trust water right may be exercised only if Ecology first determines that the authorization will not impair any other water right. Yakima River flows will be increased (or, if to mitigate out of priority consumptive uses, it will be water budget neutral with respect to TWSA) during the irrigation season as a result of cessation of irrigation of the Talerico property; therefore, impairment of other rights is anticipated.

New groundwater users seeking to rely on this water right for mitigation will be required to apply for a Water Budget Neutral Determination. This determination will include a detailed evaluation of the potential for impairment of existing rights according to WAC 173-539A-060(4)(a)-(d).

Public Interest Considerations

Pursuant to RCW 90.42.040(4)(a) exercise of a trust water right may be authorized only if the department first determines that the public interest will not be harmed. Ecology must consider how the change in purpose and acceptance into the Trust Water Right Program will affect a variety of factors such as wildlife habitat, recreation, water quality, and human health. These factors were taken into account during the consideration of this application, which allowed the author to reach the conclusion that this transfer will not be detrimental to the public interest.

RECOMMENDATION

Based on the above investigation and considerations, I recommend the request for change of CS4-01279sb5c be approved in the amounts and within the limitations listed below and subject to the provisions on page 2.

Purposes of Use and Authorized Quantities

Instream flow & water banking to offset the consumptive use associated with new groundwater uses in the Yakima Basin, in the following quantities:

	June	July	August	Sept.	Total
Q _i (cfs)	0.02	0.04	0.03	0.02	-----
Q _a (ac-ft/yr)	1.1	2.1	1.6	1.2	6.0

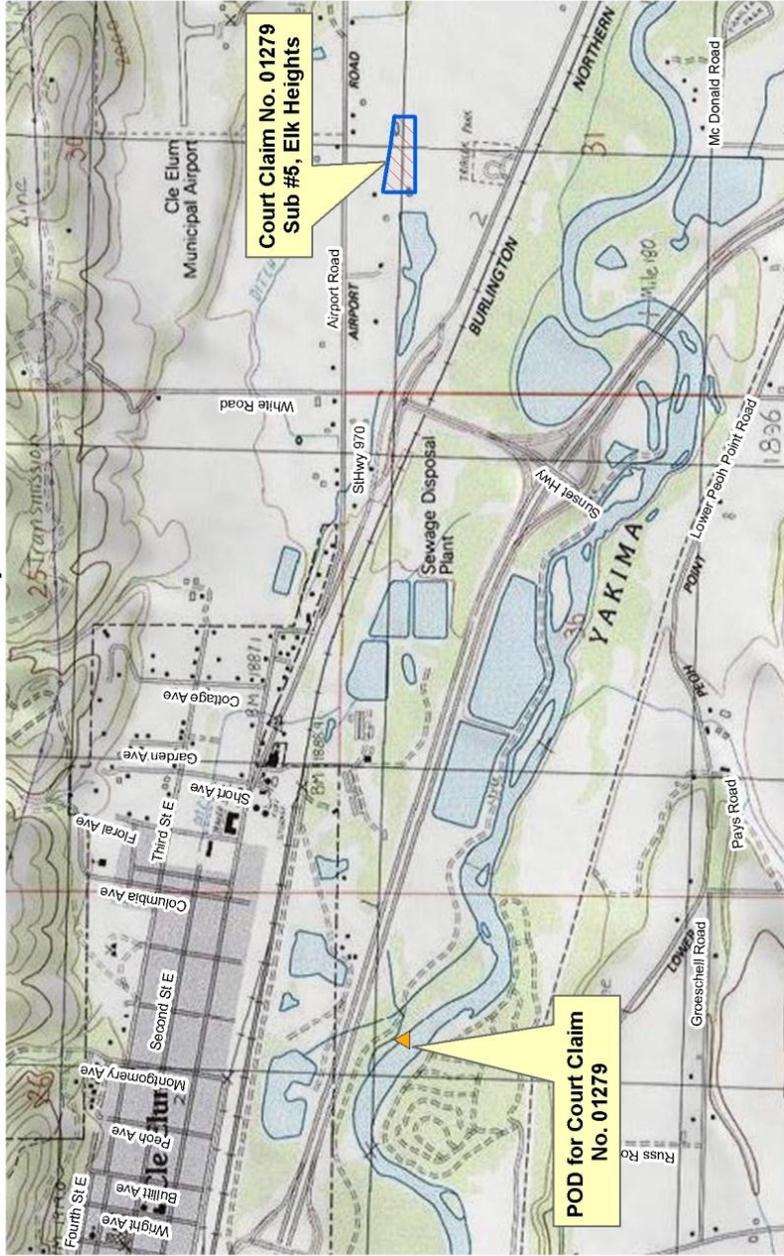
Report by: _____ Date _____
Buck Smith, LG, LHG
Licensed Hydrogeologist No. 1479

Report by: _____ Date _____
Melissa Downes
Water Resources Program/CRO

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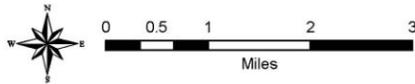
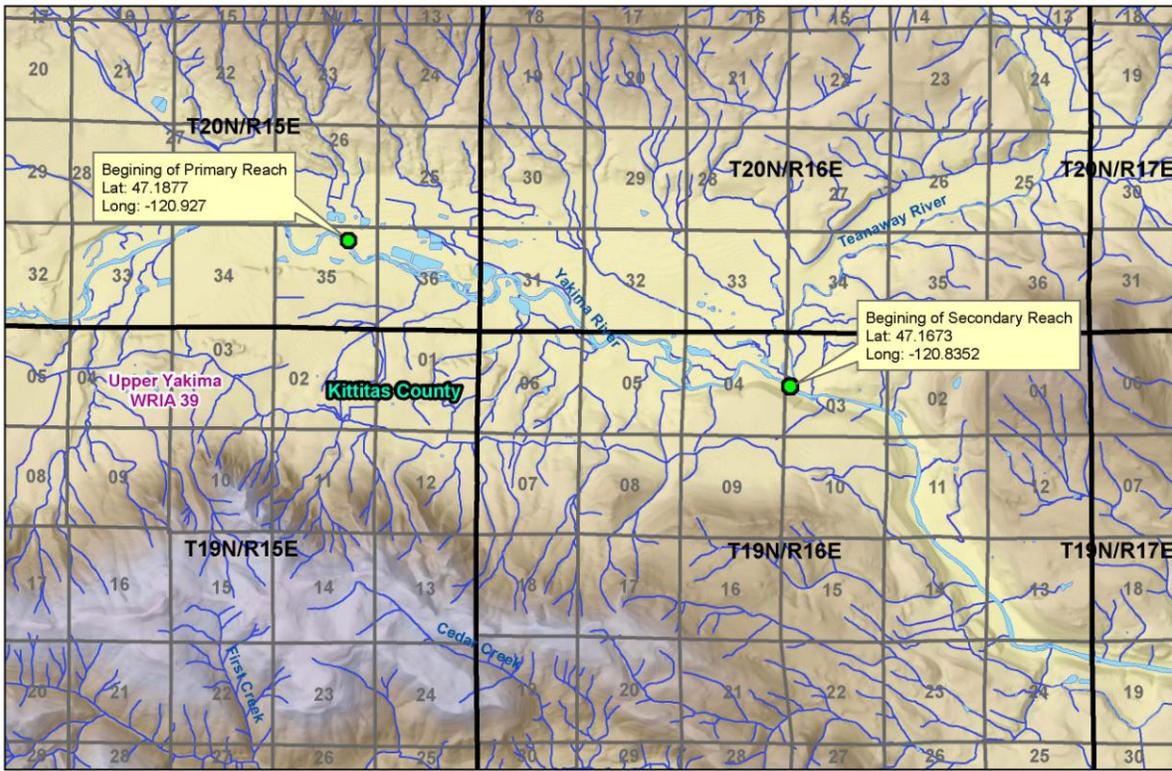
Talerico Project



Point of diversion
Place of use
TOPO- USA Topo Maps

1,000 500 0 1,000
Feet
April 2011

DEPARTMENT OF
ECOLGY
State of Washington



Trust Water Right
 CS4-01279sb5c
 6/22/2011



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