



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION
Change of: Point of Withdrawal
*WRTS File No. CS3-*28319J*

PRIORITY DATE The year 1888 (Class 26)	CLAIM NO.	PERMIT NO.	CERTIFICATE NO. Walla Walla Adjudicated Certificate No. 319
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NAME Vincent Locati (cc: Troy Locati and Diana Garcia, 7313 Wright Ave. SW, Seattle, Washington 98136)		
ADDRESS/STREET 763 N. E. Damson Avenue	CITY/STATE Walla Walla, Washington	ZIP CODE 99362

PUBLIC WATERS TO BE APPROPRIATED

SOURCE DENIED		
TRIBUTARY OF (IF SURFACE WATERS)		
MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
QUANTITY, TYPE OF USE, PERIOD OF USE DENIED		

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL					
LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP	RANGE	WRIA	COUNTY
		N.	E.W.M.		
PARCEL NUMBER 350725230016	LATITUDE		LONGITUDE	DATUM	

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED
[Attachment 1 shows location of the authorized place of use and point(s) of diversion or withdrawal.]

n/a

DESCRIPTION OF PROPOSED WORKS

n/a

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE n/a	COMPLETE PROJECT BY THIS DATE n/a	WATER PUT TO FULL USE BY THIS DATE n/a
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PROVISIONS

n/a

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 denial of the requested change to add a well hydraulically connected to Cold Creek under Walla Walla Adjudicated Surface Water Certificate No. 319.

You have a right to appeal this action to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this document. 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 this document:

- File your appeal and a copy of this document 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 document on Ecology in paper form - by mail or in person. (See addresses below.) Email 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 4224 – 6th Avenue SE Rowe Six, Building 2 Lacey, WA 98503	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Please also send a copy of your appeal to:

Mr. Keith L. Stoffel
Department of Ecology
Eastern Regional Office
4601 North Monroe Street
Spokane, WA 99205-1295

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> .

Signed at Spokane, Washington, this day of 2010.

Keith L. Stoffel, Section Manager
Water Resources Program
Eastern Regional Office

BACKGROUND

Description and Purpose of Proposed Change

An application for change/transfer was submitted to Ecology on June 5, 2003, by Vincent Locati of Walla Walla, Washington. Mr. Locati proposes to add a point of withdrawal (a well hydraulically connected to Cold Creek) to his portion of the right, as granted under Walla Walla River Surface Water Adjudicated Certificate No. 319 (Certificate 319).

Attributes of the Certificate and Proposed Change

Table 1 Summary of Proposed Changes to Walla Walla Adjudicated Certificate No. 319

<i>Attributes</i>	<i>Documented</i>	<i>Proposed</i>
Name	Caterina Locati	Vincent Locati
Dates	Priority Date: The year 1888 (class 26)	Date of Application for Change: June 5, 2003
Instantaneous Quantity	0.133 cfs from April 1 to July 1 0.085 cfs from July 1 to Oct. 1 0.170 cfs from Oct. 1 to April 1	<i>no change</i>
Annual Quantity	42.5 acre-feet	<i>no change</i>
Source	(upper) Cold Creek	A well hydraulically connected to Cold Creek
Point of Diversion/Withdrawal	NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M.	SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M.
Purpose of Use	Irrigation of 8.5 acres	<i>no change</i>
Period of Use	Year round, when allowed	<i>no change</i>
Place of Use	Approximation: Portions of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M.	<i>no change</i>

Legal Requirements for Proposed Change

The following is a list of requirements that must be met prior to authorizing the proposed change to add a well hydraulically connected to Cold Creek.

- **Public Notice**

A notice of application was duly published in accordance with RCW 90.03.280 in the Walla Walla Union Bulletin on June 20th and June 27th, 2003 and no protests were received.

- **State Environmental Policy Act (SEPA)**

Environmental review under SEPA is required for many projects; however, some minor projects are categorically exempt from SEPA. Appropriations of one cfs or less of surface water, or of 2,250 gpm or less of ground water, for any purpose, and appropriations of 50 cfs or less for surface water used for irrigation are categorically exempt from SEPA. See WAC 197-11-305.

- **Water Resources Statutes and Case Law**

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.

The Washington Supreme Court has held that Ecology, when processing an application for change to a water right, is required to make a tentative determination of extent and validity of the claim or right. This is necessary to establish whether the claim or right is eligible for change. R.D. Merrill v. PCHB and Okanogan Wilderness League v. Town of Twisp.

A point of diversion for a surface water right may be changed to a groundwater point of withdrawal. The authority is derived from RCW 90.03.380, RCW 90.44.020-030, RCW 90.44.100 and RCW 90.54.020(9). RCW 90.03.380(1) states that a water right that has been put to beneficial use may be changed if it would not result in detriment or injury to other water rights. Additionally, moving the point of diversion to a groundwater withdrawal requires compliance with the groundwater code (RCW 90.44), including a finding that there be no detriment to the public welfare and that the source of the existing diversion and the proposed point of withdrawal be part of the same water body.

INVESTIGATION

In considering the proposed change/transfer, the investigation included, but was not limited to, research and review of: (1) appropriate rules and statutes; (2) Walla Walla River Adjudicated Certificate No. 319, and other water rights/claims/permits in the vicinity; (3) diversion works and wells; (4) USGS topographic maps, aerial photographs, State of Washington Irrigation Guide (Natural Resources Conservation Service 1997) and; (5) discussions with Department of Ecology regional program staff.

A site visit of the project was conducted on October 17, 2007, by Karen Tusa and Dan Tolleson with Vincent Locati. Vincent Locati is the contact person for this change and Troy Locati is the owner of the lot within the place of use of the water right. The project is located off Damson Avenue in the City of Walla Walla. The water right is located in the Walla Walla Basin and is managed under Chapter 173-532 WAC Water Resources Program for the Walla Walla River Basin, WRIA 32.

The authorized place of use is approximately 8.5 acres of land, lying within portions of the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M. This area is currently subdivided into four (4) lots with individual owners. Each of these lots has a house, out buildings and various amounts of irrigation for their yards. The water right authorizes enough acres to potentially provide irrigation for the entire place of use. Because of multiple owners, this change will only determine the extent and validity of that portion of the water right proposed for change by Mr. Locati. The portion of the place of use located on the land owned by Mr. Locati is primarily level pasture with a house, garage/shop and small yard located within the southeast corner of his lot. The irrigation system consists of handlines for the pasture and small sprinklers for the yard.

History of Water Use

Aerial photographs were used to help verify the extent of development, historical and beneficial use of Walla Walla River Adjudicated Certificate No. 319. The authorized place of use appears to have been historically irrigated farm land that was eventually changed to the irrigation of yards and gardens. Irrigation within the lot owned by Mr. Locati is approximately 1.4 acres.

The authorized water duty of this certificate is 5 acre-feet per year, per acre. Historically, this right was used to grow a variety of crops. In recent years this right has predominately been used to irrigate a yard. The State of Washington Irrigation Guide (WA210-VI-WAIG) states that an estimated 2.9 acre-feet, per acre, is required for grass/turf in the Walla Walla area. The current irrigation system of sprinklers is estimated at a 70% efficiency rate of application. With a 70% efficiency rate of application an estimated 4.2 acre-feet per acre would need to be applied for crops that use 2.9 acre-feet per acre. Continued irrigation of the lot owned by Mr. Locati will require 5.9 acre-feet per, per year for the irrigation of 1.4 acres.

The authorized point of diversion is located within the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M., which is the location of the springs that feeds the upper portion of Cold Creek. The creek has historically been a spring-fed water way channeled through a ditch system. It serves this and several other water rights in the vicinity. Approximately 20 years ago, the upper portion of the ditch was replaced with a pipe. The pipe runs from the authorized point of diversion, which are the springs to a point east of Damson Avenue which is approximately 100 feet from the Locati home. At this location there is a junction box used to divert water to a pumping station located on the eastern edge of Mr. Locati's property.

The diversion is proposed to be changed to a well in hydraulic continuity with the Cold Creek system. The proposed well was constructed in 1993 for domestic supply of the house on Mr. Locati's lot. This is located within the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 25, T. 7 N., R. 36 E.W.M.

A water use schedule for most of the adjudicated rights that divert water along this portion of Cold Creek has a recorded agreement, dated August 14, 1996. This agreement was established due to the low instantaneous quantity authorized under each right and the limited quantities of water available from Cold Creek. Not all water users can pump at one time and some share instantaneous quantities when irrigating. The water use agreement recommends a use of 4.2 hours, per week, per acre of water right. Walla Walla Adjudicated Certificate No. 319 has a time of use scheduled for each Monday from 6:00 AM to Tuesday at 5:45 PM. This is a recommended schedule and is not strictly followed.

In most years, Mr. Locati can obtain a full quantity of water for his portion of the right. Quantities can be limited in summer months in which the total flow of the creek is often used by the various diverters.

Other Rights Appurtenant to the Place of Use

A review of Ecology records was conducted for existing water rights and permits in the surrounding area of the Locati project. The search focused primarily on Section 25, T. 7 N., R. 35 E.W.M. The review of Ecology records showed multiple water rights appurtenant to the authorized place of use, which are as follows:

Surface Water Certificate No. 317 authorizes the use of 0.089 cfs from April 1 to July 1, 0.067 cfs from July 1 to Oct. 1, and 0.134 cfs from Oct. 1 to April 1, 33.25 acre-feet per year for the irrigation of 6.65 acres. The authorized point of diversion is from Cold Creek, within the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M. The authorized place of use lies within the E $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Sec. 25, T. 7 N., R. 35 E.W.M. This certificate overlaps the Locati parcel, but has not been used on his lot.

Ground Water Certificate No. G3-24627 authorizes the use of 40 gallons per minute, 16.27 acre-feet per year from Jan. 1 to Dec. 31, each year, for the irrigation of 3.5 acres, and 2 acre-feet per year for continuous domestic supply and stock water. The authorized place of use of this right overlaps a portion of the place of use of Certificate 319, but not that portion owned by Mr. Locati.

Ground Water Certificate No. 4246-A authorizes the use of 40 gallons per minute, 16 acre-feet per year, each year, for the irrigation of 4 acres, and for continuous domestic supply and stock water, less any amount diverted from Cold Creek rights. The authorized place of use of this right overlaps a portion of the place of use of Certificate 319, but not that portion owned by Mr. Locati.

Ground Water Certificate Nos. G3-20306C, 1062-A, 1063-A, 4081-A, 1900-A and 3151-A are municipal rights for the City of Walla Walla. These certificates overlap the Locati parcel, but are not in use on his lot.

(The validity and extent of the above listed water rights are not determined in this report.)

Hydrologic/Hydrogeologic Evaluation

The following hydrogeologic analysis was written by Guy J. Gregory, Eastern Region Technical Unit.

The proposed diversion point is an existing well located approximately 200 feet north of the ditch, and approximately 1500 feet west of the spring source of the ditch. The water well report shows the well being drilled through sands and gravels to a depth of 134 feet below land surface. The casing was perforated from 79 to 134 feet, and the static water level measured 34 feet below land surface on February 26, 1993. Other wells in the vicinity show similar construction and static water levels.

The proposed point of diversion for this change application is located within the Walla Walla Basin, a hydrologic sub basin of the Columbia Plateau. This basin developed as a structural trough within the Columbia River Basalt Group that was later overlain by unconsolidated sediments. The lowermost sediment unit is referred to as the "blue clay" which rests directly on the basalt basement rock. Directly overlying the "blue clay" and interfingering with it are gravel units. The various unconsolidated gravel units serve as the aquifer material which forms the uppermost, unconfined, water table aquifer. Aquifers are also present within the consolidated Tertiary-aged, Columbia River Basalt Group. These basalt aquifers are predominately confined in this area and are separated from the gravel aquifer by the "blue clay" unit.

Information from well drilling logs throughout the basin indicates that the gravel aquifer is generally unconfined. Long-term water level measurements collected by both the United States Geological Survey and the Oregon Water Resources Program over the last 50 years indicate that the gravel aquifer is experiencing a slow, gradual, decline in the water table surface. In addition to this long-term decline, there is seasonal variation in water level that is typical of unconfined aquifers.

Analytical stream depletion modeling performed on gravel aquifer wells within the basin in the recent past has shown a direct hydraulic connection between many gravel aquifer wells and surface waters of the basin.

The Walla Walla Basin Management Program also recognizes the hydraulic connection between the gravel aquifer and surface waters of the basin by requiring that: "New appropriators of ground water will be required to locate wells outside the zone of direct hydraulic continuity between surface water stream and the ground water aquifer." (WAC 173-532-050). The context of this requirement is the fact that surface waters of the basin have been fully appropriated, and surface waters of the basin have been closed to new appropriations (WAC 173-532-040). Any additional impact to surface waters through issuance of a new water right or change to an existing water right will likely cause impairment to existing surface water right holders.

It is reasonable to assume from the above-described information that the subject well is hydraulically connected to the surface water source. Pumping well water can affect groundwater movement by lowering pressure and heads, by reducing groundwater storage, and by changing rates of groundwater recharge and discharge. The interrelationship can be quite complex and effects are sometimes difficult or impossible to measure in the field. Also, depending on conditions, pumping groundwater may not have a discernable effect on surface water until considerable time has passed. This delay becomes important in evaluation of the potential impairment or injury of the change to existing water rights.

Impact of well pumping on the stream

To assess the amount of flow taken from the stream by the well, and the time necessary once pumping ceases for the full amount of water to be delivered to the stream, I performed a calculation as described by C. T. Jenkins in 1968, from the publication "Computation of Rate and Volume of Stream Depletion by Wells" which is Chapter D1, Book 4 of "Techniques of Water Resources Investigations of the United States Geological Survey". I obtained representative physical properties of the aquifer from the "Digital Model of the Gravel Aquifer, Walla Walla River Basin, Washington and Oregon", State of Washington Water Supply Bulletin 45, by R. A. Barker and R. D. MacNish, dated 1976. Both documents are available on-line. Ecology Eastern Regional Office has an Excel®-based software program which accompanies this document and performs these calculations.

I performed these calculations to evaluate the rate and volume of impact on the spring source of the stream after pumping stopped. The application outlines three cases, a rate of 59 gpm (0.133 cfs) for three months, a rate of 38 gpm (0.085 cfs) for three months, and a rate of 76 gpm (0.170 cfs) for six months.

Aquifer properties come from the Barker and MacNish study. I used a transmissivity of 59,432 gallons per day per square foot, based upon the gravel's average hydraulic conductivity of 4.6×10^{-4} ft/sec. and an aquifer thickness of 200 feet, and a specific yield of 0.2. The distance from the well to the spring source of the stream is 1500 feet.

Using the assumptions implicit in the Jenkins' analysis and the spreadsheet calculation, I generated the attached graphs. The attached graphs indicate significant depletion of the spring (or reduction of ground water flow to the stream) will occur after pumping ceases. In every case, the stream will see an impact of greater than 10 gallons per minute for between 120 and about 300 days.

The assumptions implicit in the Jenkins analysis are:

1. Transmissivity does not change with time. Thus for a water-table aquifer, drawdown is considered to be negligible when compared to the saturated thickness.
2. The temperature of the stream is assumed to be constant and to be the same as the temperature of the water in the aquifer.
3. The aquifer is isotropic, homogeneous, and semi-infinite in areal extent.
4. The stream that forms a boundary is straight and fully penetrates the aquifer.
5. Water is released instantaneously from storage.
6. The well is open to the full saturated thickness of the aquifer.
7. The pumping rate is steady during any period of pumping.

My judgment is that the most significant departures from these assumptions are those dealing with partial penetrations of both the well and the stream. I believe that the effects of these departures will essentially negate the other, so that the results of the calculations should be a reasonable, if conservative, approximation. Note also that this equation neglects the effects of recharge.

Using the assumptions implicit in the Jenkins' analysis, the attached graphs indicate significant depletion of the spring source of the stream (or reduction of ground water flow to the stream) will occur after pumping ceases. Considering the effects of departure of the situation from the assumptions, these calculations indicate that, should regulation be required, the full amount of benefit accrued to the senior rightholder will be delayed by several weeks, if not months. Furthermore, impact to the spring source and ditch will be in evidence long after the well has been turned off.



