

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

- Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE April 1, 2008	APPLICATION NUMBER G3-30552	PERMIT NUMBER	CERTIFICATE NUMBER
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NAME Harry Hosey			
ADDRESS (STREET) 18440 16 th Avenue NW	(CITY) Shoreline	(STATE) Washington	(ZIP CODE) 99177

PUBLIC WATERS TO BE APPROPRIATED

SOURCE A well (gravel aquifer)		
TRIBUTARY OF (IF SURFACE WATERS)		
MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 20	MAXIMUM ACRE FEET PER YEAR 8

QUANTITY, TYPE OF USE, PERIOD OF USE
20 gallons per minute, 8 acre-feet per year, continuously, each year, for single domestic supply (non-consumptive heat exchange/heat pump use)

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL
575 feet North and 600 feet West of the S¹/₄ corner of Sec. 10. Tax Parcel No. 35-06-10-52-0003
(GPS Coordinates: N 46.00707° W 118.42267° WGS 84 Datum)

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) SE ¹ / ₄ SW ¹ / ₄	SECTION 10	TOWNSHIP N. 6	RANGE, (E. OR W.) W.M. 35 E.	W.R.I.A. 32	COUNTY Walla Walla
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RECORDED PLATTED PROPERTY

LOT 2 and 3	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION) Greystone Heights
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LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Lot Numbers 2 and 3 of the Final Plat of Greystone Heights filed in Book 7 of Plats at Page 24, under Auditor's File No. 2006-13620, records of the Auditor of Walla Walla County, State of Washington.
Tax Parcel No. 35-06-10-52-0003

DESCRIPTION OF PROPOSED WORKS

Gravel aquifer well, submersible pump, heat exchanger, drainfield (120 feet of 4-inch perforated pipe set over 4 feet of gravel)

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE: Started	COMPLETE PROJECT BY THIS DATE: May 1, 2010	WATER PUT TO FULL USE BY THIS DATE: May 1, 2011
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PROVISIONS

Wells, Well logs and Well Construction Standards:

1. In accordance with WAC 173-160, wells shall not be located within certain minimum distances of potential sources of contamination. These minimum distances shall comply with local health regulations, as appropriate. In general, wells shall be located at least 100 feet from sources of contamination. Wells shall not be located within 1,000 feet of the boundary of a solid waste landfill.
2. All wells constructed in the state shall meet the construction requirements of WAC 173-160 titled "Minimum Standards for the Construction and Maintenance of Wells" and RCW 18.104 titled "Water Well Construction". Any well which is unusable, abandoned, or whose use has been permanently discontinued, or which is in such disrepair that its continued use is impractical or is an environmental, safety or public health hazard shall be decommissioned.
3. All wells shall be tagged with a Department of Ecology unique well identification number. If you have an

existing well and it does not have a tag, please contact the well-drilling coordinator at the regional Department of Ecology office issuing this decision. This tag shall remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

4. Installation and maintenance of an access port as described in WAC 173-160-291(3) is required.

Measurements, Monitoring, Metering and Reporting:

5. An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173. **The withdrawal authorized herein shall be metered separately from water withdrawn from this same well for permit-exempt (WAC 173-532-050) purposes.**

<http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html>

6. Water use data shall be recorded monthly. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to the Department of Ecology by January 31st of each calendar year.

7. Reported water use data shall be submitted via the Internet or by using the enclosed forms. To set up an Internet reporting account, access <https://fortress.wa.gov/ecy/wrx/wrx/Meteringx/>. If you have questions or need additional forms, contact the Eastern Regional Office at 4601 North Monroe, Spokane, WA 99205-1295.

Schedule and Inspections:

8. 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.

General Conditions:

9. Use of water under this authorization shall be contingent upon the water right holder's maintenance of efficient water delivery systems and use of up-to-date water conservation practices consistent with established regulation requirements and facility capabilities.

10. The subject infiltration system shall be registered with Ecology's Underground Injection Control Program prior to discharge of any water withdrawn under this authorization. <http://www.ecy.wa.gov/pubs/wac173218.pdf>.

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. Furthermore, I find the issuance of a new water right permit, as recommended, will not be detrimental to existing rights.

Therefore, I ORDER approval of issuance of a new permit recommended through Water Right Application No. G3-30552, subject to existing rights and the provisions listed above.

You have a right to appeal this Order. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the "date of receipt" of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the "date of receipt" of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). "Date of receipt" is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of this document that you are appealing with your Notice of Appeal.
- Serve and file your appeal in paper form; electronic copies are not accepted.

1. To file your appeal with the Pollution Control Hearings Board

Mail appeal to:

The Pollution Control Hearings Board
PO Box 40903
Olympia, WA 98504-0903

OR

Deliver your appeal in person to:

The Pollution Control Hearings Board
4224 – 6th Ave SE Rowe Six, Bldg 2
Lacey, WA 98503

2. To serve your appeal on the Department of Ecology

Mail appeal to:

The Department of Ecology
Appeals & Application for Relief
Coordinator
PO Box 47608
Olympia, WA 98504-7608

Deliver your appeal in person to:

OR The Department of Ecology
Appeals & Application for Relief
Coordinator
300 Desmond Dr SE
Lacey, WA 98503

3. And send a copy of your appeal to:

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

*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 30th day of April, 2009.



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

INVESTIGATOR'S REPORT

BACKGROUND

Description and Purpose of Proposed New Appropriation

The project site is located within a 12-lot development situated approximately 3 miles southwest of College Place, Washington, and one-half mile north of the Washington-Oregon state line.

The subject proposal involves the withdrawal of water from an existing permit-exempt gravel aquifer well for the purpose of heat exchange. The water would be pumped into a PVC line to the Hosey home currently being built at the top of a bluff approximately 35 feet above the wellhead. The water would be run through a heat pump exchange unit for the purpose of radiant floor heating and forced air ventilation and cooling. The water would return to a constructed drainfield trench located approximately 20 feet north of, and at roughly the same elevation as, the subject well.

The drainfield consists of 120 feet of perforated 4-inch PVC pipe set in a trench approximately 3 feet down onto 4 feet of gravel. The pipe is wrapped in geo-textile fabric and the trench is backfilled with native soil. The intent is to have the full discharge from the heat exchanger return to the source aquifer, and therefore be considered as non-consumptive.

Expedited Processing

Normally new water right applications are acted upon in the order in which they are received – by priority date. Certain new water right applications are afforded priority processing if they meet certain conditions. With respect to this application, WAC 173-152-050(2) provides that an application may be processed prior to competing applications if the department determines that:

“The proposed water use is nonconsumptive and if approved would substantially enhance or protect the quality of the natural environment.” (WAC 173-152-050(2)(b))

Ecology also has a policy titled “Priority Processing of Heat Pump Applications” – POL 2020. This Policy reiterates that an application for withdrawal of water for heat exchange purposes may be afforded priority processing provided that the conditions set forth in WAC 173-152-050(2)(b) are met.

1. Non-Consumptive Use: Ecology Water Resource Program Policy POL-1020 governs determination of consumptive vs. non-consumptive water use. The Policy defines ground water use as non-consumptive when:

“...there is no diminishment of the source. In order not to diminish the source, the withdrawn water is injected or infiltrated immediately back to the aquifer. The water must be returned in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells. An example of this use is a heat pump.”

2. Substantially Enhance or Protect the Natural Environment: An open-loop water source heat pump exchange system such as that proposed generally provides a considerable improvement in energy efficiency over comparable traditional systems. There is an energy savings over air-source heat pumps, particularly during periods of below-freezing weather, and there is no direct combustion associated with these systems as there would be with coal, oil or natural gas. The energy savings and reduction of greenhouse gases that this type of system provides over conventional heating and cooling systems can be considered as substantially enhancing the natural environment.

The open-loop heat pump exchange system proposed herein meets the criteria set forth in WAC 173-152-050(2)(b) and is afforded priority processing.

Legal Requirements for Proposed New Water Right

The following is a list of requirements that must be met prior to approving issuance of a new water right as proposed in Application No. G3-30552:

- **Water Resources Statutes and Case Law**

This application is subject to legal requirements in statute, administrative rules, and relevant case law which must be considered prior to issuance of the requested permit. Among these legal requirements:

RCW 90.03.250 provides that anyone desiring to appropriate water for a beneficial use must make application to the department for a permit to make such appropriation, and shall not perform any work associated with such appropriation until a permit has been granted by the department.

RCW 90.03.290(3) holds that the department shall develop written findings regarding investigation of the application, and if it finds that there is water available for the proposed use; that the proposed use is for a beneficial purpose; and that the proposed appropriation will not impair existing rights or be detrimental to the public welfare, it shall issue a permit stating the amount of water the application is entitled to and for what beneficial uses the water may be applied.

RCW 90.44.050 provides that no withdrawal of public ground waters shall be initiated unless an application to appropriate such waters has been made to the department and a permit has been granted by it.

- **Public Notice**

A notice of application was duly published in accordance with RCW 90.03.280 in the Walla Walla Union Bulletin on May 4th and May 11th, 2008. No protests or objections were received.

- **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 of the following conditions are met:

- It is a surface water right application for more than 1 cubic foot 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;
- It is a groundwater right application for more than 2,250 gallons per minute;
- It is an application that, in combination with other water right applications for the same project, collectively exceeds the amounts above;
- Is 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.

This application does not meet any of the proceeding conditions, and is therefore categorically exempt from the provisions of the State Environmental Policy Act (SEPA) of 1971, Chapter 43.21C RCW.

On-site meetings were held between Mr. Hosey and Ecology Watermaster Bill Neve in September and October of 2008. Additional information was obtained utilizing e-mail and telephone discussions. Reports and materials considered during the course of this investigation include the following:

- The State Water Code, administrative rules and policies, relevant case law
- Ecology's well construction log database
- Other recorded water rights in the vicinity
- USGS Topographic maps

Proposed Use

Mr. Hosey is currently building a new home on the project site, and is proposing a water source, open-loop heat exchange system for heating and cooling within the home. The source of water for this system is a gravel aquifer well, which will also be used to supply water for in-house use within the new home.

All the lots within the Greystone Meadows development are all to be served under the permit exemption for domestic supply, and given the number of lots, are limited to in-house use only from gravel aquifer exempt wells; limited to no more than 450 gallons per day. As the proposed use of water will exceed this quantity, a water right will be required, hence this application. This water right *would not* include the in-house use of water under the permit exemption; it would only cover the non-consumptive use of water for heat-exchange/heat pump purposes.

Other Rights Appurtenant to the Place of Use

There is one other water right which includes the subject property within its authorized place of use. Ground Water Claim No. 097013 authorizes the withdrawal of up to 370.85 gallons per minute, 300.17 acre-feet per year, for the seasonal irrigation of 152.5 acres. The source of water for this right is a well withdrawing water from a basalt aquifer.

Ground Water Claim No. 097013 provides the sole source of water for irrigation purposes for the Greystone Meadows development. Lot owners within this development may drill permit-exempt wells on their property, but the withdrawal of water from these wells is limited to in-house use only and no more than 450 gallons per day per household.

Hydrologic/Hydrogeologic Evaluation

The well proposed for use under this application was drilled in September of 1999. The well bore penetrates alternating layers of clay and gravel to a total depth of 215 feet, and 8-inch casing was installed to 198 feet. The well withdraws water from the upper sand and gravel alluvial aquifer. That aquifer is closed to further consumptive appropriation consistent with WAC 173-532-040(2).

The water withdrawn for purposes of the heat exchange will be returned to a 120 foot infiltration trench/drainfield. A percolation test was performed at the site which determined an infiltration rate of 3.3 inches per hour, using testing standards for a sewage system design. The drainfield was then designed to address a maximum flow rate of 20 gallons per minute, 24 hours per day, for 7 consecutive days. One hundred twenty feet of 4-inch pvc perforated pipe was installed over 4 feet of coarse gravel, all wrapped in geo-textile fabric. A vertical vent pipe was installed at the near end of the drain pipe, which will provide a release for discharged water should the discharge exceed the drainage capability of the drainfield. Should such a condition occur, Mr. Hosey has indicated that the drainfield will be extended to provide additional drainage area.

The drainfield is located about 20 feet north of the source well for this proposal. Ecology Policy POL-1020 provides that for a proposed withdrawal/diversion of water to be considered non-consumptive, there must be no diminishment of the source. In order not to diminish the source, "...the withdrawn water is injected or infiltrated immediately back to the aquifer. The water must be returned in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells."(POL-1020).

Policy-2020, which addresses priority processing of heat pump applications, requires that the return system be designed to accept the discharge water in an efficient manner at the same rate of flow as produced by the source, and that the infiltration system be registered with the Department's Underground Injection Control Program.

Impairment Considerations

Walla Walla River Basin surface water rights have a history of being fully appropriated that dates back to the late 1800's. The gravel aquifer, which would provide the source of water for this application, has a significant hydraulic connection to basin surface waters. This connection was explicitly acknowledged in the revised Walla Walla Basin Water Management Program, Chapter 173-532 WAC (September, 2007). In recognizing this hydraulic connection, the rule also closed the gravel aquifer to all new consumptive water rights, and placed limits on the quantities and uses allowed from gravel aquifer withdrawals under the ground water permit exemption.

The proposed appropriation would be considered as non-consumptive, as defined through POL-1020 and POL 2020, and thus may be considered consistent with WAC 173-532-045(1). There would be no diminishment of water in the gravel aquifer through the withdrawal of water as proposed, as the water would be returned to the same aquifer in close proximity, in both time and space, to the location from which it would be withdrawn.

Public Interest Considerations

The proposed withdrawal of water would be considered as a non-consumptive appropriation. Approval of this application would also result in overall benefit to the natural environment, in increasing energy efficiency to the heating/cooling system of the home that would be utilizing the heat exchange system.

Consideration of Protests and Comments

No protest or comments were received with respect to this application.

CONCLUSIONS

State law requires that the following tests must be met before a new water right permit may issue:

- Water must be available, both legally and physically, for the proposed use;
- The proposed use must be for a beneficial purpose;
- The proposed appropriation, if approved, must not impair existing water rights;
- The proposed appropriation, if approved, must not be detrimental to the public welfare.

Water Available for Proposed Use

Based on the hydrogeology of the Walla Walla Basin, gravel aquifers within the basin have been closed to new consumptive appropriations. WAC 173-532-040(2) However, non-consumptive withdrawals from the gravel aquifer may be permitted provided they are consistent with other applicable requirements of the law. WAC 173-532-045(1).

The proposed use of water is considered non-consumptive as the water withdrawn will be returned to the same aquifer in close proximity in time and space to the location from which it was withdrawn. In addition to being legally available, the gravel aquifer in this area has the physical capacity to supply the quantity of water requested. There is water available for the proposed use.

Proposed Use is for a Beneficial Purpose

Heat pump water use - (non-consumptive heat exchange) - is considered a beneficial use of ground water (Ecology Policy POL-2020)

No Impairment to Existing Rights

As the proposed withdrawal of water is considered non-consumptive, no impairment will be created to existing water rights, including instream flows.

No Detriment to Public Welfare

The proposed withdrawal of water will provide environmental benefits in the form of increased energy efficiency, and the co-incident reduction in greenhouse gases that additional power consumption associated with conventional heating/cooling systems would involve. There will be no detriment to the public welfare through approval of a permit through this application.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that a new water right permit be approved in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2.

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial:

- 20 gpm
- 8 acre-feet per year
- Domestic supply – non-consumptive heat exchange/heat pump use

Point of Withdrawal

SE $\frac{1}{4}$, SW $\frac{1}{4}$, Section 10, Township 6 North, Range 35 E.W.M.

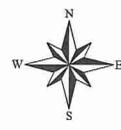
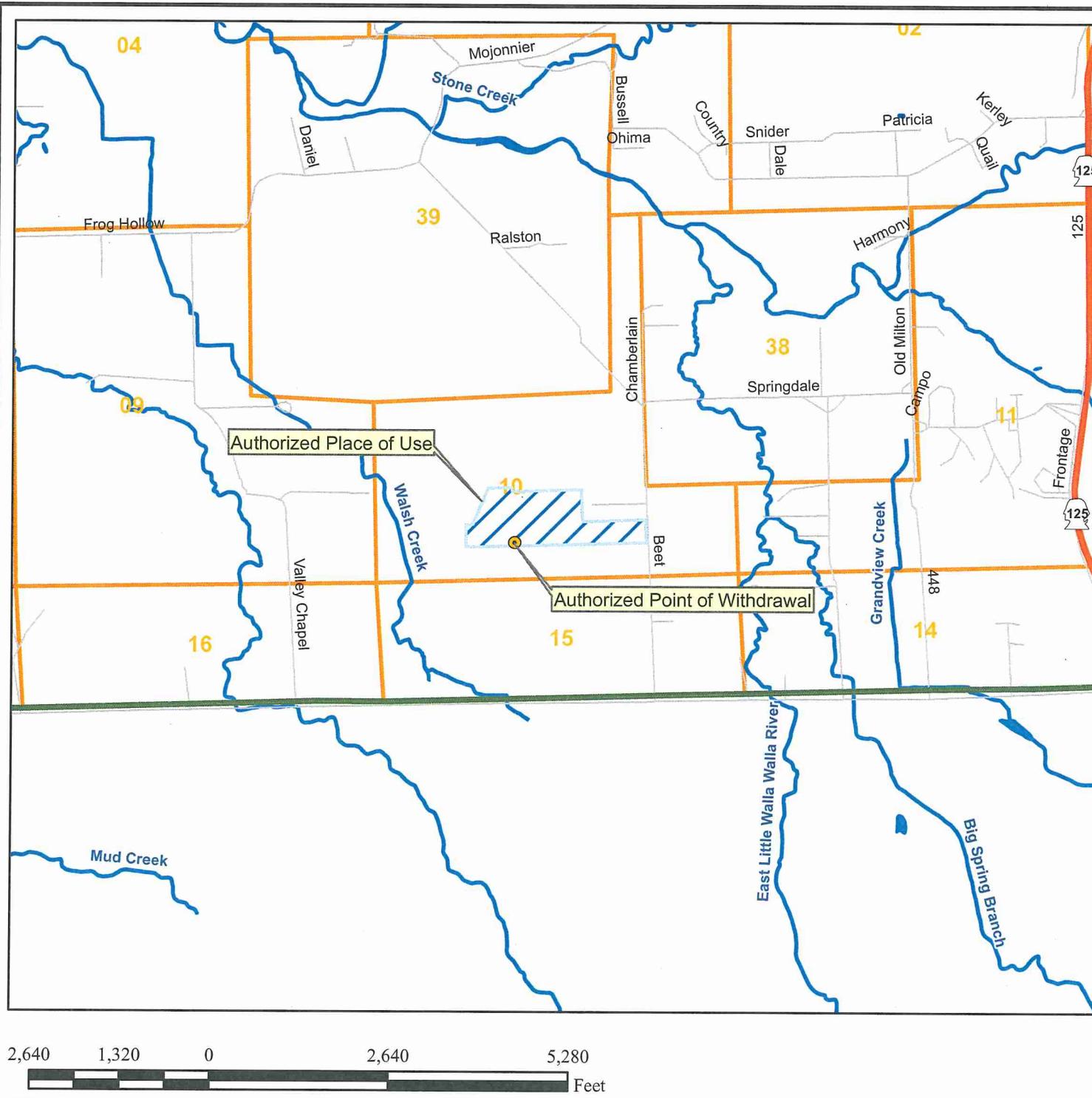
Place of Use

As described on Page 1 of this Report of Examination and as shown on Attachment 1.

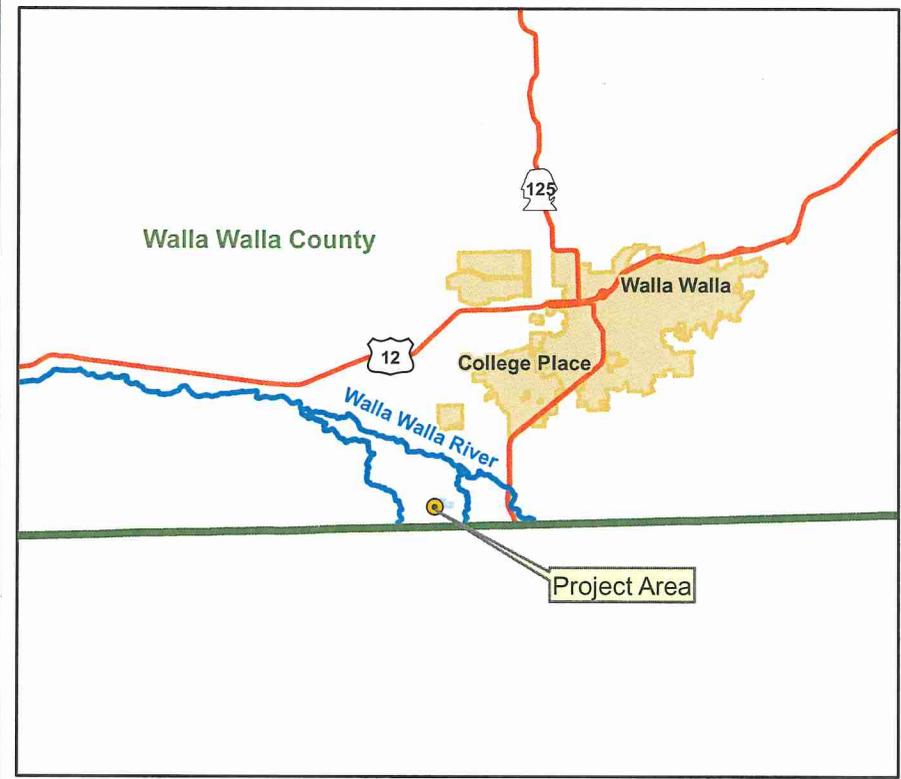
Report by: Keith Stoff for Bill Neve Date 4/30/09
Bill Neve
Water Resources Program

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W/Draft ROEs/Neve 2009/G3-30552 Hosey



Mr Harry Hosey
 Application G3-30552 for Ground Water
 Sec. 10, T 06N, R 35E.W.M.
 WRIA 32 - Walla Walla County



- Legend**
- County
 - WRIA
 - Sections
 - Townships
 - Cities
 - Local Roads
 - Highways
 - Authorized Place of Use
 - Authorized Point of Withdrawal

Comments:
 Place of use, points of withdrawal/diversions are as defined on the cover sheet under the heading, 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'

Attachment 1