



STATE OF WASHINGTON
REPORT OF EXAMINATION FOR WATER RIGHT
Application for permit to appropriate state groundwaters
Water Right Control Number G1-28022

PRIORITY DATE February 11, 1999	APPLICATION NO. G1-28022	PERMIT NO.	CERTIFICATE NO.
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NAME
 Wildwood View Acres Water Association

ADDRESS/STREET P.O. BOX 297	CITY/STATE COUPEVILLE, WA	ZIP CODE 98239
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PUBLIC WATERS TO BE APPROPRIATED

SOURCE Well	WRIA 6	COUNTY ISLAND
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TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 24	MAXIMUM ACRE FEET PER YEAR 3.6
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QUANTITY, PURPOSE OF USE, PERIOD OF USE
 3.6 acre-feet, multiple domestic, Year round as needed

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL
 Wildwood View Acres Division No. 1, Lot 21-3

SOURCE	LATITUDE	LONGITUDE	QTR/QTR	SECTION	TOWNSHIP	RANGE
Well	48° 7' 13.286" N	-122° 34' 53.848" W	SW NE	05	30	02E W.M. Island County

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]

Wildwood View Acres Division No. 1, Lots: 1, 2, 3, 4, 6-1, 7, 9-1, 10-1, 10-2, 11-1, 14, 18

DESCRIPTION OF PROPOSED WORKS

Fully built system. All 12 requested connections occupied year-round.

5 h.p. submersible pump, 978 gallon pressure tank, 1,400 gallon storage tank (not yet connected)

Two-inch lines serve each residence.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE Completed	WATER PUT TO FULL USE BY THIS DATE August 31, 2011
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PROVISIONS

Wildwood must install a well probe access tube or airline in their current well to permit regular static water level readings.

- 1. Wells, Well logs and Well Construction Standards**
 - 1.1. 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.
 - 1.2. 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.
 - 1.3. Installation and maintenance of an access port as described in WAC 173-160- 291(3) is required.

2. Measurements, Monitoring, Metering and Reporting

- 2.1. An approved measuring device shall 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", WAC 173-173.
- 2.2. Reported water use data shall be submitted via the Internet. To set up an Internet reporting account, access <https://fortress.wa.gov/ecy/wrx/wrx/Meteringx/>. If you do not have Internet access, contact the Northwest Region Office for forms to submit your data.
- 2.3. WAC 173-173 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 for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".
<http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html>
- 2.4. In order to maintain a sustainable supply of water, pumping must be managed so that static water levels do not progressively decline from year to year. Water levels shall be measured and recorded monthly, using a consistent methodology. Data for the previous year shall be submitted by January 31 to the Department of Ecology.

Static water levels data shall be submitted in digital format and shall include the following elements:

1. Unique Well ID Number
2. Measurement date and time
3. Measurement method (air line, electric tape, pressure transducer, etc.)
4. Well status (pumping, recently pumped, etc.)
5. Water level accuracy (to nearest foot, tenth of foot, etc.)
6. Description of the measuring point (top of casing, sounding tube, etc.)
7. Measuring point elevation above or below land surface to the nearest 0.1 foot
8. Land surface elevation at the well head to the nearest foot.
9. Static water level below measuring point to the nearest 0.1 foot.

3. Chloride Monitoring

In January of each year, the following information shall be submitted in writing to the Department of Ecology, Northwest Region Office, Bellevue, Washington.

April and September measurements from the subject well(s) of:

- Chloride and conductivity (the chemical analysis shall be performed by a state-accredited laboratory)
- Depth to static water level (with pump off long enough to allow for stabilization)
- The chloride/conductivity sampling and the static water level measurement shall be conducted concurrently.

This data collection will assist the applicant and Ecology in determining if actions are necessary to prevent an increasing trend in chloride concentrations (an indicator of seawater intrusion). Preventative actions may include – reducing the instantaneous pumping rate, reducing the annual volume pumped, scheduling pumping to coincide with low tides, raising the pump intake, and/or limiting the number of service connections.

4. Water Use Efficiency

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.

5. 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.

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 appropriation to develop a water right as recommended will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER the requested appropriation under Application No. G1-28022, subject to existing rights and the provisions specified above.

You have a right to appeal this decision. 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:	OR	Deliver your appeal in person to:
The Pollution Control Hearings Board PO Box 40903 Olympia WA 98504-0903		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:	OR	Deliver your appeal in person to:
The Department of Ecology Appeals Coordinator P.O. Box 47608 Olympia WA 98504-7608		The Department of Ecology Appeals Coordinator 300 Desmond Dr SE Lacey WA 98503

3. And send a copy of your appeal to:

Andrew B. Dunn, LG, LHG
Section Manager
Water Resources Program -- Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

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> .

If you have any questions, please contact Noel Philip of Ecology at (425) 649-4451.

Signed at Bellevue, Washington, this 11th day of August, 2008.

Andrew B. Dunn, LG, LHG
Section Manager
Water Resources Program
Northwest Region Office

INVESTIGATOR'S REPORT

Noel S. Philip, LG, Department of Ecology
Water Right Control Number G1-28022

BACKGROUND

Groundwater Application #: G1-28022
Applicant Name: Wildwood View Acres
Priority Date: February 11, 1999
Source: Well
Purpose of Use: domestic multiple
Period of Use: year round
Notice of Publication: Whidbey News Times, April 7 and 14, 1999
Protests: None received during 30-day protest period
SEPA Compliance: Exempt

Wildwood View Acres submitted Groundwater Application G1-28022 to the Department of Ecology to appropriate state groundwater. The well is located in SW $\frac{1}{4}$, NE $\frac{1}{4}$ of Section 5, Township 30N, Range 2E, Island County (Attachment 1). The application seeks instantaneous (37 gpm) and annual quantities to serve 14 homes. A phone interview confirmed the place of use extends to 12 homes, and is fully built-out.

Water Resources Statutes

RCW 90.03.250 states any person, municipal corporation, firm, irrigation district, association, corporation or water users' association hereafter desiring to appropriate water for a beneficial use shall make an application to the department for a permit to make such appropriation, and shall not use or divert such waters until he has received a permit from the department as in this chapter provided.

INVESTIGATION

Whidbey Island Hydrogeology

As noted by Easterbrook (1968), Whidbey Island is generally composed of unconsolidated Pleistocene glacial and interglacial deposits overlying Tertiary and older bedrock. The Island County Groundwater Management Plan, Part A, Technical Memorandum, (GWMP) describes the groundwater flow system on Whidbey Island as a series of discontinuous water-bearing zones (sand and gravel aquifers) surrounded by zones of lower-permeable glacial sediments (silt, clay and till aquitards). All recharge to the system originates as rain falling on the surface of the island. Groundwater generally flows downward in the inland portions of the island then outward through the aquifers toward the coast and offshore. In these discharge areas, groundwater generally flows from deeper to shallower aquifer zones and then discharges to the sea where the aquifers intersect a cliff, beach face or ocean bottom.

The series of aquifers on Whidbey Island is complex, resulting from the deposition and erosion patterns created by at least three glaciation and three inter-glaciation periods. Although the USGS has designated five aquifer zones, termed A (oldest) through E (youngest), these zones are laterally discontinuous, vary in depth and thickness, and may be interconnected at various locations. The degree of connection with marine waters is also likely variable. As a result, the effect of withdrawing groundwater from any particular depth and location could have widely variable impacts on nearby wells and on the potential for seawater intrusion.

Hydrogeology Near G1-28022

The Wildwood well is approximately 4,550 feet east of Juan de Fuca Strait, Puget Sound, on central Whidbey Island (Attachment 1). Whidbey Well Drillers (Coupeville, WA) constructed the well. A hand-written well log describes the well as screened in a gravel water-bearing unit as they were brought to the surface. The screened interval length is unknown. The static water level present approximately -0.21 feet mean sea level (MSL, 281.21 feet below ground surface), above the screened interval, suggests the aquifer exhibits locally confined conditions at this well location. Based on the static groundwater elevation and information from the applicant, the well appears to terminate in Aquifer C.

Aquifer C commonly appears near sea-level on Whidbey Island. The entire unit is described as a zone containing many small, separate aquifers; not one laterally continuous water-bearing zone.

Table 1. Well construction details.	Well #1
Date completed	2/15/1957
Casing diameter (inches)	4
Static Water Level (TOC)	281.21
Wellhead elevation (MSL)	288
Static Water Level elevation (MSL)	6.79
Screened Interval (MSL)	unknown
Height of water column above screen	unknown
Volume of static water column above pump intake	unknown

Note: TOC = top of well casing; MSL = feet relative to sea level; Units are feet unless otherwise noted.

Water Availability

The well sustained a withdrawal rate of 24 gpm during the pump test. Water levels in the pumped well declined approximately 0.6 feet, and recovered over 200 minutes to within 0.2 feet of pre-pumping conditions. The summary of pump test data is provided in Table 2, below:

Table 2. Pump test data.	
Date	08/16/06
Duration (hours)	24
Static Water Level (TOC)	281.21
Pumping Water Level	285.9
Drawdown	4.7
Stabilization Time	5 hours
Recovery Level (TOC)	281.55
Recovery Time	60 min

Note: TOC = top of well casing; Units are feet unless otherwise noted.

The pump test and recovery data show the well is capable of providing water at 24 gpm. The well was pumped 24 hours, a duration not likely to be repeated during regular use of the well for the use specified. Ecology staff attempted a water level measurement June 11, 2008, but failed due to obstructions in the casing. The static depth to water is taken from pump test data. A provision of the permit shall require water level measurement and reporting. A well probe access tube must be installed to make it possible to measure static water levels in the well through time. Regular monitoring of static water levels shall be necessary to promote awareness of water levels and availability.

The water requirement for the Wildwood commercial and domestic uses is estimated for the number of buildings in the proposed development project. In an interview during a field exam, Daniel Horsell stated 12 connections are already connected to the system, and all are full-time residences. In a follow-up phone call to determine place of use, Horsell changed the number of connections to 12, based on records he referenced at the time. These 12 connections shall require 0.3 acre-feet each in permit. Annual water allocation required by the applicant is calculated using the number of anticipated connections and estimations of water use per connection. Residential water use is based on historical and current water use data from similar water systems on Whidbey Island. Presently, these systems indicate that average water use per connection is approximately one-third (0.3) acre-foot per year. At this rate, the annual water quantity required by the applicant to serve 12 residential connections is 3.6 acre-feet per year.

Potential for Seawater Intrusion

The greatest threat to groundwater in Island County is seawater intrusion. The potential for seawater intrusion relates to the elevation of the groundwater (or potentiometric surface) relative to sea level. Aquifers having little or no groundwater head above sea level are susceptible to intrusion. Other factors such as recharge rate, pumping rate, aquifer transmissivity, hydraulic gradient, seasonal variation, and the geometry of the aquifer can influence the distribution and magnitude of seawater intrusion resulting from any particular withdrawal. Increasing concentrations of chloride in groundwater can be an indication of seawater intrusion. Unaffected groundwater in Island County generally contains a chloride concentration between 10-20 mg/L. Concentrations of 100 mg/L or greater provide evidence of seawater intrusion unless other sources of chloride are present such as naturally occurring hard groundwater.

The Island County Health Department ranking system classifies the area of withdrawal as medium risk for seawater intrusion. This classification is due to the low static water level in the well. While the subject wells themselves show no signs of seawater intrusion, long term pumping may encourage the advancement of the saltwater-freshwater interface throughout the lifetime of the permit, to say nothing of water use in perpetuity. Such an event would impair the use of wells between the Wildwood well and the coast. Impairment is discussed in the next section.

Water quality data from samples taken throughout the test from the well show chemistry levels indicative of typical background concentrations. The report shows 27 mg/L chlorides, 158 mg/L hardness (as CaCO3) and 420 mhos conductivity. Regular, diligent monitoring and reporting will describe the current health and help administrators prevent degradation of the aquifer.

Impairment Considerations

Groundwater wells at greatest risk of potential impairment are those which are completed in the same aquifer zone as the subject well, located in close proximity to the subject well, and also located hydrogeologically down-gradient from the subject well. As water in the aquifer travels toward wells located down-gradient from the subject well, the subject well may potentially capture this water and impair the production of down-gradient wells. Also, surface water diversions located within a close proximity of the subject well may potentially be impacted by the groundwater withdrawal, depending upon hydraulic continuity of the aquifer and surface water body. An arbitrarily, yet conservatively chosen area of one-half mile (1/2-mile) is used to define "close proximity." This value is justified experimentally based on current and historical pump test data showing negligible drawdown, and therefore unlikely impairment to wells or surface water diversions, induced by groundwater withdrawal at distances of 1000 feet in most cases. Furthermore, it is widely understood the aquifer systems in Island County are not laterally continuous, suggesting physical barriers exist in addition to limiting hydraulic conditions.

The Department of Ecology Water Rights Application Tracking System (WRATS) and Well Log databases and the Island County Hydrogeology database (March 2003) show the existence of one water right certificate, and 6 water right claims within a 1/2-mile radius of the Wildwood Well. Some of the 18 well-owners of record (points of withdrawal) within one half mile are likely tied to water rights, be they claims, permits, or applications, and some are likely exempt from the application process. Still others may be sources for existing water right certificates or claims under a different name.

There are at least five wells in the Wildwood Acres short plat. These are mostly domestic supply wells exempt from application for water rights. These homes are not part of the 12 served by the Wildwood well. There is no record of complaint or impairment due to the Wildwood well from any of these well owners.

A water right claim is a statement describing the beneficial use of water occurring prior to the adoption of the water right codes and is not authorized by a state-issued permit or certificate. It is unknown whether the nearby claims are valid, not valid, or once valid and now relinquished back to the state. The Department of Ecology cannot verify the validity of these claims, as water right claims can only be confirmed in an adjudication by the Washington State Superior Court. Exempt withdrawal of public groundwater is defined in RCW 90.44.050.

Washington water law does not consider drawdown to be an impairment of existing water rights, unless the affected wells fully penetrate the aquifer and can no longer produce their allocations. Therefore, impairment to any senior water rights due to pumping of the Wildwood wells is unlikely.

Public Interest Considerations

Factors considered in determining whether this use of water is in the public interest include but were not limited to: consideration given to exempt wells; existing water right certificates, applications, and claims; potential impacts to the aquifer subject to withdrawal as it pertains to drawdown and water quality (i.e. sea-water intrusion); beneficial use of water as a resource defined in this report. No detriment to the public interest could be identified during the investigation of the subject application. Available data show existing wells in the area are not expected to be impaired by the anticipated operation of the subject well.

Consideration of Protests and Comments

No protests were filed against this application.

CONCLUSIONS and RECOMMENDATIONS

Based on the hydrogeologic evaluation and preliminary assessment of potential impairment to existing rights, Ecology recommends groundwater application G1-28022 be approved for a 24 gpm pump rate, and an allocation of 3.6 acre-feet per year to serve 12 connections. Provisions to the permit should include regular monitoring of chloride levels and static water levels in April and September each year. Metering the source is also necessary, and the applicant should report the water quality and metering data yearly. A three-year development schedule is warranted due to the complete status of the development.

A provision unique to the Wildwood system is the requirement to install a well probe access tube or an airline to accurately measure of water levels in the well.

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:

- 24 gpm
- 3.6 acre-feet per year
- Multiple domestic (12 homes/connections)

Point of [Diversion Withdrawal]

SE¹/₄, NE¹/₄, Section 5, Township 30 North, Range 2E.W.M.

Place of Use

As described on Page 1 of this Report of Examination.

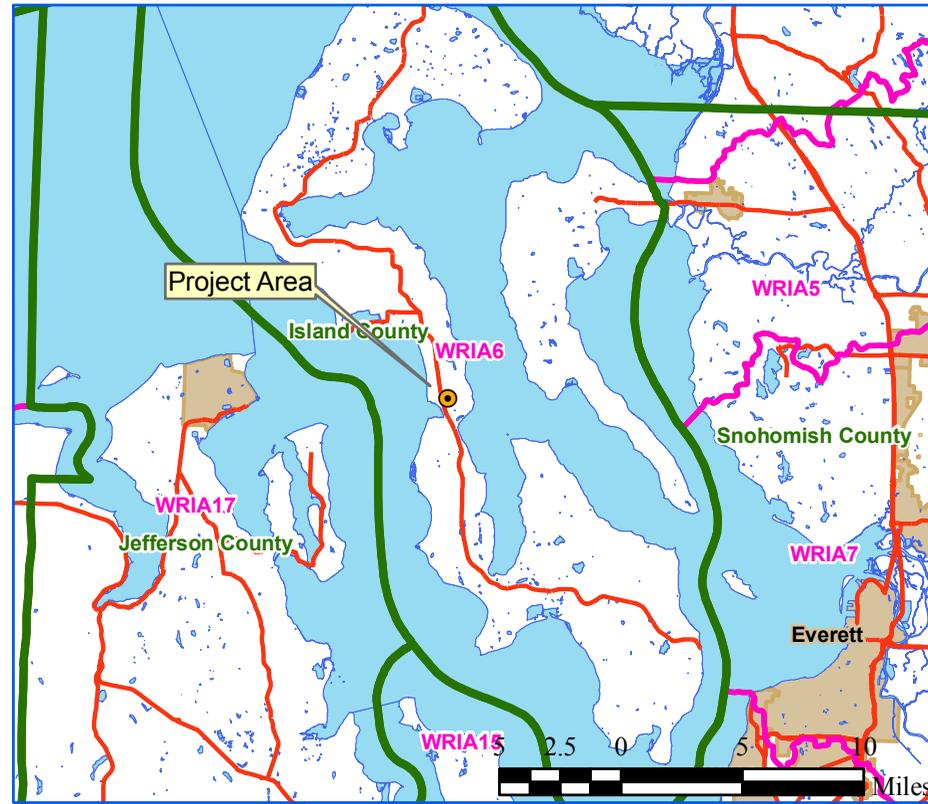
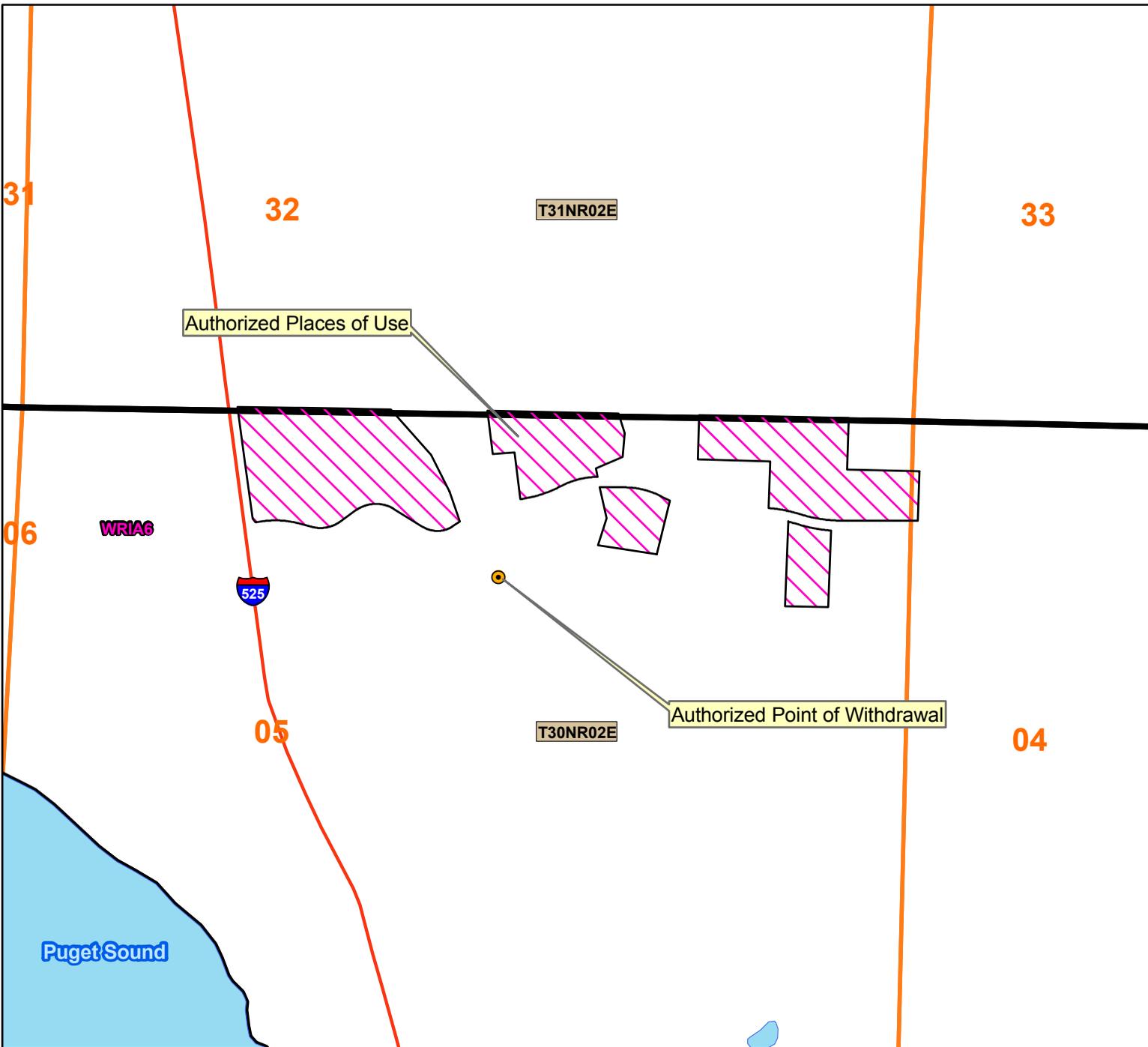
Report by: _____
Noel S. Philip, LG
Water Resources Program

August 11, 2008
Date

If you need this publication in an alternate format, please call Water Resources Program at (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



Wildwood View Acres Water Association
 Water Right Number G1-28022
 Sec. 05, T 30N, R 02E. W.M.
 WRIA 6 - Island County



Legend

- County
- WRIA
- cities
- Highways
- Local Roads
- Townships
- Sections
- Parcels
- Authorized Point of Withdrawal
- Authorized Place of Use

Place of use and point(s) of diversion/withdrawal are as defined on the cover sheet under the headings, 'LOCATION OF DIVERSION/WITHDRAWAL' and 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'

Attachment 1