



STATE OF WASHINGTON
REPORT OF EXAMINATION FOR WATER RIGHT CHANGE
 Water Right Control Number CG1-23519C

Purpose Place of Use Point of Diversion/Withdrawal Season Consolidation

PRIORITY DATE November 30, 1979	CLAIM NO.	PERMIT NO. G1-23519P	CERTIFICATE NO. G1-23519C
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NAME
King County Water District 19

ADDRESS/STREET P.O. Box T	CITY/STATE Vashon, WA	ZIP CODE 98070
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PUBLIC WATERS TO BE APPROPRIATED

SOURCE Add Morgan Hill Well (Well 3)	WRIA 15	COUNTY KING
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TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 250*	MAXIMUM ACRE FEET PER YEAR 300**
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QUANTITY, PURPOSE OF USE, PERIOD OF USE

300 acre-feet, MU, Year round as needed, split 222 afy to Certificate G1-23519AC and 78 afy to Permit G1-23519BP

* Rate of withdrawal (Qi) from both G1-23519AC and G1-23519BP may not exceed a total of 250 gpm. Total from Well 3 may not exceed 35 gpm.

** Annual consumptive use (Qa) from both G1-23519AC and G1-23519BP may not exceed a cumulative total of 300 afy. Total from Well 3 may not exceed 45 afy.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL

- Well 1 – Approximately 725 feet North and 2325 feet West of the SE Corner of Section 31, T22N, R03E.
- Well 2 – Approximately 725 feet North and 2325 feet West of the SE Corner of Section 31, T22N, R03E.
- Well 3 – Approximately 2475 feet South and 475 feet East of the SW Corner of Section 8, T22N, R03E.
- Well 4 – C Approximately 725 feet North and 2325 feet West of the SE Corner of Section 31, T22N, R03E.

SOURCE	PARCEL	LATITUDE ¹	LONGITUDE	QTR/QTR	SECTION	TOWNSHIP	RANGE
Well 1	3123039154	47.434	122.467	SW/SE	31	23	03E
Well 2	3123039154	47.434	122.467	SW/SE	31	23	03E
Well 3 (Morgan Hill)	0822039038	47.411	122.458	NW/SW	08	22	03E
Well 4	3123039154	47.434	122.466	SW/SE	31	23	03E

1: Calculated from DOH Public Water System Source data layer point location using ArcGIS/Xtools utility.

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]

The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as **King County Water District 19** is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

DESCRIPTION OF PROPOSED WORKS

A six-inch diameter well completed at a depth of 363 feet. Casing is in place to 338 feet below top of casing (3 feet above surface). Five-inch diameter screens are installed from 335 feet to 360 feet.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE Started	COMPLETE PROJECT BY THIS DATE Completed	WATER PUT TO FULL USE BY THIS DATE September 30, 2019
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PROVISIONS

SPECIAL PROVISIONS

1. Partial Rescission of Certificate
 - 1.1. Certificate number G1-23519AC shall be issued in the amount of 250 gpm and 222 afy, the quantities shown to have been perfected under the original certificate.
 - 1.2. Permit number G1-23519BP shall be issued in the amount of 250 gpm and 78 afy, representing the unperfected quantities under the original certificate.
 - 1.3. The total combined instantaneous rate of withdrawal (Q_i) of both certificate G1-23519AC and Permit G1-23519BP shall not exceed the maximum Q_i of 250 gpm from all points of withdrawal approved for both.
 - 1.4. The total combined annual quantity (Q_a) from both certificate G1-23519AC and Permit G1-23519BP shall not exceed the maximum Q_a of 300 afy from all points of withdrawal approved for both.

STANDARD PROVISIONS

2. Approval of Proposed Change
 - 2.1. The request for an additional point of withdrawal under application for change CG1-23519C is granted.
 - 2.2. The cumulative instantaneous rate of withdrawal (pumping rate) from all points of withdrawal approved for use under groundwater right G1-23519 shall not exceed 250 gallons per minute. The additional point of withdrawal authorized through this change (Morgan Hill Well) shall operate at a pumping rate not to exceed 35 gallons per minute.
 - 2.3. The cumulative annual quantity from all points of withdrawal approved for use under groundwater right G1-23519 shall not exceed 300 acre-feet per year. The annual quantity approved for the new point of withdrawal authorized through this change shall not exceed 45 acre-feet per year.
 - 2.4. The purpose of use shall be amended to Municipal Supply.
3. Wells, Well logs and Well Construction Standards
 - 3.1. 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.
 - 3.2. 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.
 - 3.3. Installation and maintenance of an access port as described in WAC 173-160- 291(3) is required.
 - 3.4. In addition to the required access port, the applicant shall install and maintain, in operating condition, an airline and pressure gage. The pressure gage shall be equipped with a standard tire valve and placed in a location accessible to Department of Ecology personnel. The airline shall extend from land surface to the top of the pump bowls and the total airline length shall be reported to the Department of Ecology upon completion of the pump system.
4. Measurements, Monitoring, Metering and Reporting
 - 4.1. 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.
 - 4.2. Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to the Department of Ecology by January 31st of each calendar year. The Department of Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.
 - 4.3. Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.
 - 4.4. 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.
 - 4.5. 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>

4.6. 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. The length of the pumping period or recovery period prior to each measurement shall be constant, and shall be included in the record. 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.

5. Department of Health Requirements

Prior to any new construction or alterations of a public water supply system, the State Board of Health rules require public water supply owners to obtain written approval from the Office of Drinking Water of the Washington State Department of Health. Please contact the Office of Drinking Water at Northwest Drinking Water Operations, 20435 72nd Avenue S, Suite 200, K17-12, Kent, WA 98032-2358, (253) 396-6750, prior to beginning (or modifying) your project.

6. Municipal Place of Use

If the criteria in RCW 90.03.386(2) are not met and a Water System Plan/Small Water System Management Program was approved after September 9, 2003, the place of use of this water right reverts to the service area described in that document. If the criteria in RCW 90.03.386(2) are not met and no Water System Plan/Small Water System Management Program has been approved after September 9, 2003, the place of use reverts to the last place of use described by The Department of Ecology in a water right authorization

7. Easement and Right-of-Way

The water source and/or water transmission facilities are not wholly located upon land owned by the applicant. Issuance of a water right change authorization by this department does not convey a right of access to, or other right to use, land which the applicant does not legally possess. Obtaining such a right is a private matter between applicant and owner of that land.

8. 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.

9. Superseding Certificate (Applies to G1-23519AC)

A superseding certificate shall issue for G1-23519AC, in the amounts specified herein, after the thirty day appeal period for this order has expired if no appeals have been received.

10. Notice of Project Completion (Applies to G1-23519BP)

For permit G1-23519BP as described herein, the water right holder shall file the notice of project completion when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate subsequently issued will reflect the extent of beneficial use within the limitations of the change authorization. Elements of the project completion inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and compliance with provisions.

11. 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 change of water right as recommended will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER the requested change under Groundwater Change Application No. CG1-23519C, 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:

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 Coordinator
P.O. Box 47608
Olympia WA 98504-7608

OR Deliver your appeal in person to:

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://www.l.leg.wa.gov/CodeReviser> .

If you have any questions, please contact Doug Wood with Ecology at (425) 649-7077.

Signed at Bellevue, Washington, this _____ day of _____, 2009.

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

INVESTIGATOR'S REPORT

Douglas H. Wood, LHG, Department of Ecology
Water Right Control Number CG1-23519C

BACKGROUND

Description and Purpose of Proposed Change

King County Water District 19 (WD19) is a Group A public water system serving over 1,400 connections with an estimated population of 2,641 on Vashon and Maury Islands, located in King County Washington (DOH System ID 38900).

The islands are within the Kitsap Watershed, Water Resources Inventory Area (WRIA) 15. The islands hydrology is known to be separate from that of the Kitsap Peninsula and groundwater on the islands is classified by the Environmental Protection Agency (EPA) as a Sole Source Aquifer.

WD19 has been developing its rights under G1-23519C, its principal groundwater source, for 30 years. The site has been developed through the construction of three wells (Well 1, Well 2 and Well 4). While the well field has been shown to be capable of producing at 250 gpm, the limited areal extent and thickness of the completion zone within a deep confined aquifer, and the abundance of silt within the host sediments, make sustained use of the well field during peak demand periods difficult.

WD19 completed the Morgan Hill well in 1996 to test whether the aquifer found between 200 and 300 feet below sea level (Deep Aquifer) at the district's well field was present approximately 2 miles to the south in the Morgan Hill area. While a deep aquifer was found, it is not clear whether it is the same aquifer found at the well field.

Subsequent to testing, the WD19 filed application G1-27779A seeking a new water right capable of producing 40 gpm from the Morgan Hill Well (Well 3). Ecology granted temporary approval to use the Morgan Hill well in 2005 under drought permit G1-28250P.

The present application seeks to transfer quantities allocated under G1-23519C to the Morgan Hill Well. Technical reports submitted in support of this application indicate that the Morgan Hill Well is capable of sustained production at a rate of 35 gpm.

Attributes of the Certificate and Proposed Change

Table 1: Summary of Proposed Changes to Water Right Certificate No. G1-23519C		
<i>Attributes</i>	<i>Existing</i>	<i>Proposed</i>
Name	King County Water Dist 19	King County Water Dist 19
Priority Date	November 30, 1979	
Date of Application for Change		January 14, 2008
Instantaneous Quantity	250 gpm	250 gpm (35 gpm at Morgan Hill Well)
Annual Quantity	300 acre-feet per year	300 acre-feet per year (from all wells)
Source(s)	Wells 1, 2 & 4	Add Morgan Hill Well (Well 3)
Point of Diversion or Withdrawal	SW/SE T23N/R03E-31 SW/SE T23N/R03E-31 SW/SE T23N/R03E-31	NW/SW T22N/R03E-08
Purpose of Use	Community Domestic Supply	Municipal Supply
Period of Use	Year-round	Continuously
Place of Use	Area Served by King County Water District No. 19	Area Served by King County Water District No.19

Legal Requirements for Proposed Change

Washington's Water Code provides the authority to change attributes of water rights under RCW 90.03 and 90.44.

The proposed change seeks to add an additional point of withdrawal to an existing groundwater right. Since the proposed change seeks to change a groundwater right, compliance with both RCW 90.03 and 90.44 are required in order for the change to be approved. These requirements are as follows:

- Only quantities previously put to beneficial use are eligible for transfer to the new point of withdrawal.
- The change may not result in an impairment of existing water rights nor prove detrimental to the public interest.
- Water must be available at the additional point of withdrawal. Availability includes both physical and regulatory availability of water at the new well.
- The additional point of withdrawal must tap the same body of public groundwater as the original well or wells.
- The additional point of withdrawal must not enlarge the right as conveyed by the original certificate.

As part of statutorily mandated requirements, the courts in Washington have established that an evaluation must be made of the extent and validity of the water right under investigation for change. This includes an analysis of maximum beneficial use and of whether the right has relinquished for non-use under Chapter 90.14 RCW or has been abandoned. For water rights issued for municipal purposes, this analysis also includes an investigation of whether there are inchoate quantities remaining under the water right and whether due diligence has been exercised toward perfecting the full quantities allocated.

References

- Brocher et al. (1999): Wide-Angle Seismic Recordings from the 1998 Seismic Hazards Investigation of Puget Sound (SHIPS), Western Washington and British Columbia; USGS Open File Report 99-314.
- Ferguson, E.W. (2008): Vashon-Maury Island 2007 Water Resources Data Report; King County Department of Natural Resources and Parks, Water and Land Resources Division.
- Gauger, J.V. and Dow, D.C. (1997): Morgan Hill Test Well Construction and Testing Report, King County Water District 19; AGI Technologies, Inc.
- Weber, E.F. (2008): Morgan Hill Well Hydrogeological Report, Vashon Island, Washington; Landau Associates.
- King County Water District 19 (2009): Draft Minutes of the Tuesday, August 11, 2009 Board of Commissioners Meeting.

INVESTIGATION

Extent and Validity

Groundwater Certificate G1-23519C was issued on December 15, 1982, based on an application filed on November 30, 1979. As a result of limitations to the lateral extent of the aquifer, it was early recognized that the well would not be able to produce at its originally proposed 300 gpm. The permit, issued in August 1980 was reduced to 280 gpm and the certificate issued for 250 gpm (per Proof of Appropriation filed in November 1982).

Since 1982, two additional wells have been added at the original published location. Well 2 was added in 1991 and Well 4 in 2005. All three wells are completed at similar depths within a silty, fine sand aquifer.

Currently WD 19 uses Well 1 and Well 4 as production sources and Well 2 as a backup source. While the wellfield is capable of producing 250 gpm the district reports that sustainable pumping is limited to 180 gpm due to the limited areal extent of the aquifer.

The 1980 Report of Examination (ROE) for G1-23519C indicates that WD 19 recognized in 1979 and 1980, when this application was being processed, that it would require additional quantities to meet its needs by the year 2000. In 1980 WD 19 was serving 940 connections and it projected its needs in year 2000 as 2,440 connections. The 1980 ROE assumed that companion application S1-23436A would supply additional quantities for what was considered to be a deficit of 660 afy. Ecology cancelled the surface water application in 1982 after WD 19 stated it wished to postpone that project.

Year	Beall Ck (afy)	Ellis Ck (afy)	Wellfield (afy)	Total
2004	200.29	42.57	138.80	381.66
2005	153.74	26.01	159.70	339.45
2006	137.15	15.06	221.79	373.99
2007	191.25	3.95	169.68	364.88
2008	204.48	16.12	124.59	345.19
Avg Year 2004-08	177.38	20.74	162.91	361.03
Max Year 2004-08	204.48	42.57	221.79	381.66
Min Year 2004-08	137.15	3.95	124.59	339.45

The Washington Department of Health shows WD 19 serves 1,420 connections. WD 19 manager Jeffrey Lakin reports that the district has imposed moratoriums on adding connections several times since the 1980's due in part to difficulties it has encountered achieving allocated production from the G1-23519C wellfield.

WD 19 production records for the G1-23519C wellfield (Table 2) indicate, at least from 2004 to 2009, that the full allocation of 300 afy has not been perfected. The maximum reported use during the period between 2004 and the end of 2008 is 221.79 afy, or about 74% of the allocated annual quantity. Improvements achieved after completion of Well 4 in 2005 were short-lived (Figure 1).

The full Qi of 250 gpm was achieved early in the well's history, but difficulties in achieving full annual production of the existing 300 afy allocation have been a source of frustration for the district since the late 1980's. In order to address this problem the district has drilled additional wells, applied to transfer purchased water rights, applied for new water rights, and has tested implementation of an Aquifer Storage and Recovery (ASR) project.

Stream closures, community opposition to growth, and concerns about stream habitat and aquifer sustainability have resulted in the cancellation or postponement of several of its applications for new water rights. The ASR project was cancelled due to community opposition. The transfer of a water right acquired by the district in the late 1980's (Beall Greenhouse right, S1-*15998ALC), which was certificated in the 1960's for 0.4 cfs (180 gpm and approximately 290 afy) was able to provide only 55 afy after quantities available for the transfer were reduced through litigation of Ecology's decision to approve the transfer. One of four water right applications for new sources was cancelled by the applicant, two have been postponed due to community opposition, and a final one is unlikely to be approved due to stream closures in effect since the late 1970's.

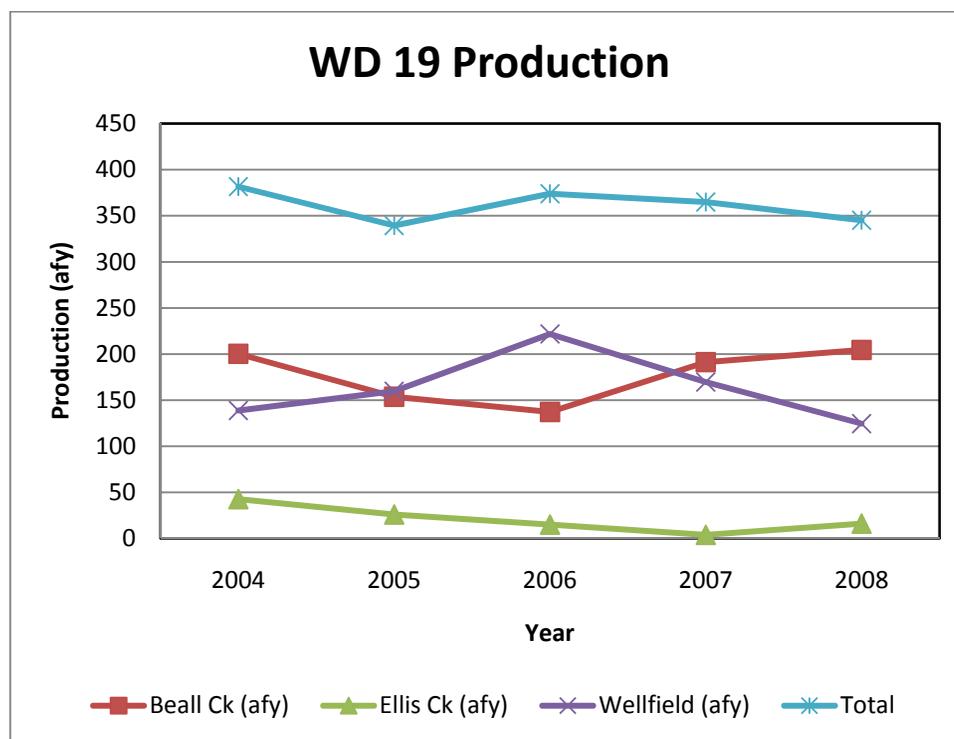


Figure 1: Water production from WD 19 sources.

The well drilled for the Greenhouse right does not appear capable of providing the full 180 gpm nor the 55 afy authorized for transfer due to limited capacity of the aquifer in which it was completed. The water encountered at this well is also of marginal quality, with iron, manganese and ammonia in low but noticeable concentrations.

WD 19 has diligently worked to perfect the full quantities allocated under G1-23519C and also diligently pursued other potential sources to serve the residents of Vashon Island that live within its boundaries.

Certificated quantities available under WD 19 rights (Table 3) indicate that the district is authorized to produce as much as 1,369 afy under four water rights. Maximum production (Table 2) between 2002 and 2004 from all sources was 381 afy in 2004, which is just under 30% of the total annual quantity allocated.

The district has physical limitations on what it can withdraw from surface sources. The Beall Creek diversion right (SWC 887) must leave 0.5 cfs (225 gpm) as bypass flows to allow for downstream riparian rights. Typical late summer flows on the creek are between 400 and 600 gpm (0.9 to 1.3 cfs), which significantly limits the district's ability to fully perfect the full Qa potential of that right.

Perfection of the quantities remaining of the 250 gpm and 300 afy allocated under G1-23519C has been diligently pursued but may not be attainable solely as a result of this proposed change.

The ability to change the unperfected quantity is in doubt as a result of uncertainties raised by on-going litigation regarding the 2003 Municipal Water Law. Recently issued guidance (GUID 2030) by Ecology has suggested that rescission of all or portion of the certificate can remove this uncertainty.

Proposed Use

WD 19 is recognized under RCW 57.04.060 as a municipal corporation. Certificate G1-23519C, which on its face states that the purpose of use is Community Domestic Supply, is servicing the purposes of a municipal corporation and should therefore have been issued for Municipal Supply. The application for change (CG1-23519C) does not specifically seek to change the purpose, but states that the existing and proposed purpose for the right is for Municipal purposes (Section 4 of application).

In 2003, the legislature of Washington State passed Second Engrossed Second Substitute House Bill 1338 (SESHB 1338) which was adopted as Chapter 5, Laws of 2003 titled "Municipal Water Supply-Efficiency Requirements", or more commonly as the Municipal Water Law (MWL).

Under the MWL, RCW 90.03.015 was amended to provide a definition of what constitutes a Municipal Water Supplier (subsection 3), and what beneficial uses are included within the definition of Municipal Water Supply Purposes (subsection 4). The MWL unambiguously included water districts within these definitions.

On June 11, 2008, Judge Jim Rogers of King County Superior Court rendered a decision in the case of the *Lummi Indian Nation, et al. v. State of Washington, et al.* (No. 06-2-40103-4 SEA). In this decision Judge Rogers

overturned parts of the MWL, including the definitions in RCW 90.03.015(3) and (4) and the provision under RCW 90.03.330(3) that recognized unperfected quantities within Municipal purpose water rights as being in “good standing”.

The decision was appealed by both the plaintiffs and defendants and now awaits review at the Supreme Court of Washington (Case No. 81809-6). Any uncertainty that this on-going litigation presents to water suppliers regarding their usage of water for municipal purposes would not however affect the usage of the term Municipal Supply Purposes for WD19, since water and sewer districts are defined as municipal corporations elsewhere in statute. In addition the district’s earliest and other water rights were issued for Municipal Purposes.

Ecology issued guidance (GUID 2030) on how to process changes to municipal water rights in May of 2009. In cases where a portion of a municipal right has not been shown to be perfected this interim guidance recommends four possible ways to process changes.

1. The applicant can withdraw the application and then reapply if they so choose when the law is finally clarified, or
2. The entity can request that its certificate be rescinded. The certificate would be replaced with a superseding permit provided the entity has been perfecting the water right with reasonable diligence consistent with the original intent. The superseding permit would include a new development schedule, or
3. The entity can request that we divide the certificate. The portion of water that has been put to beneficial use would be certificated, and a superseding permit would be issued for the inchoate portion. A new development schedule would be included, or
4. The applicant could request that we skip the application. The applicant would step aside for a period of time or in a specific circumstance (or other specified condition) and let "juniors" pass them in the priority date line. The priority date would be preserved. This could enable the applicant to wait to see if RCW 90.03.330(3) is restored before their application is processed, while retaining their existing application.

WD 19 has reviewed the above proposed options and has indicated that it wishes to proceed with this change under option 3, to have a certificate issued for its demonstrated beneficial use and the remaining inchoate quantities issued a separate permit with a new development schedule.

To achieve this division, the perfected quantities, including those quantities relevant to this application, shall be superseded by Certificate G1-23519AC (250 gpm; 221.79 afy) and the remaining inchoate quantities superseded by permit G1-23519BC (250 gpm; 78.21 afy). The combined total pumping rate (Qi) for both the certificate and permit would be shared, and both rights will share the same priority date.

Other Rights Appurtenant to the Place of Use

WD 19 has four existing water rights whose attributes are presented as Table 3.

Table 3: Water Rights held by King County Water District No. 19					
File #	Cert #	Source	Priority Date	Qi (gpm)	Qa (afy)
S1-*01490C	887	Beall Ck	9/11/1925	404	652*
S1-*01925C	836	Ellisport Ck	11/14/1926	224	362*
S1-*15998ALC	8145	Well/Beall Ck	4/14/1960	180	55
G1-23519C		Wells 1/2/4	11/30/1979	250	300
Total				1,058	1,369

* = Calculated based on full (continuous) use of Qi

Hydrologic/Hydrogeologic Evaluation

Vashon Island is situated in the central Puget Sound region of western Washington. The island is underlain to a depth of least 700 feet by Quaternary (Ice Age) unconsolidated glacial and interglacial sediments. Studies by the USGS in the late 1990’s indicate that basalt and sedimentary rock underlies Quaternary sediments as ridge lying between the Seattle Fault Zone and Tacoma Fault Zone (Brocher et al., 1999). Well logs on file with Ecology do not encounter bedrock beneath the island, thus indicating that unconsolidated sediments are present to a depth of greater than 700 feet.

Glacial outwash and fluvial interglacial sands host at least three productive aquifers that underlie the surface of Vashon Island. The shallowest of these deposits is the Vashon Recessional Outwash (Qvr), followed by, at increasing depth, by the Vashon Till (Qvt), the Vashon Advance Outwash (Qvr), the Transitional Beds (Qtb), and deeper unclassified sand and gravel dominated intervals that predate the last glacial episode (Qu).

Well logs for the proposed new point of withdrawal indicate this location is underlain by Qvr and separated from the Qva and deeper aquifers by till (Qvt) which underlies the Qvr. The completion aquifer here appears to be the Qtb. The Qtb occurs as discrete longitudinal lenses of fluvial sand and intermittent gravel within lacustrine or shallow marine silty clay. The fluvial sediments are thought to represent stream channels that existed during the transition between the last interglacial and the onset of the most recent glacial period (Vashon State of the Fraser Glaciation).

The proposed new point of withdrawal is a well WD19 completed in 1996 as a test well in pursuit of a new groundwater right (G1-27449A). The six-inch diameter well was drilled to a depth of 660 feet and completed to a depth of 363 feet below ground surface (bgs). Casing is installed to 338 feet bgs and screens are placed between 335 and 360 feet bgs. A one-foot packer and 10 feet riser lie above the screens and a 3-foot tail pipe is installed to the completion depth. Static water level (piezometric surface) of the confined completion zone aquifer was measured in 1996 at 203.13 feet bgs (approx. 47 feet above sea-level).

An important requirement for changes to groundwater rights is that a new point of withdrawal must tap the same body of public groundwater as that of the original point of withdrawal. Although this can be interpreted to mean that both wells need be completed in the same water bearing layer within a multi-layer stratigraphic sequence, the facts on Vashon Island support including both shallow and deeper aquifers as a single aquifer system.

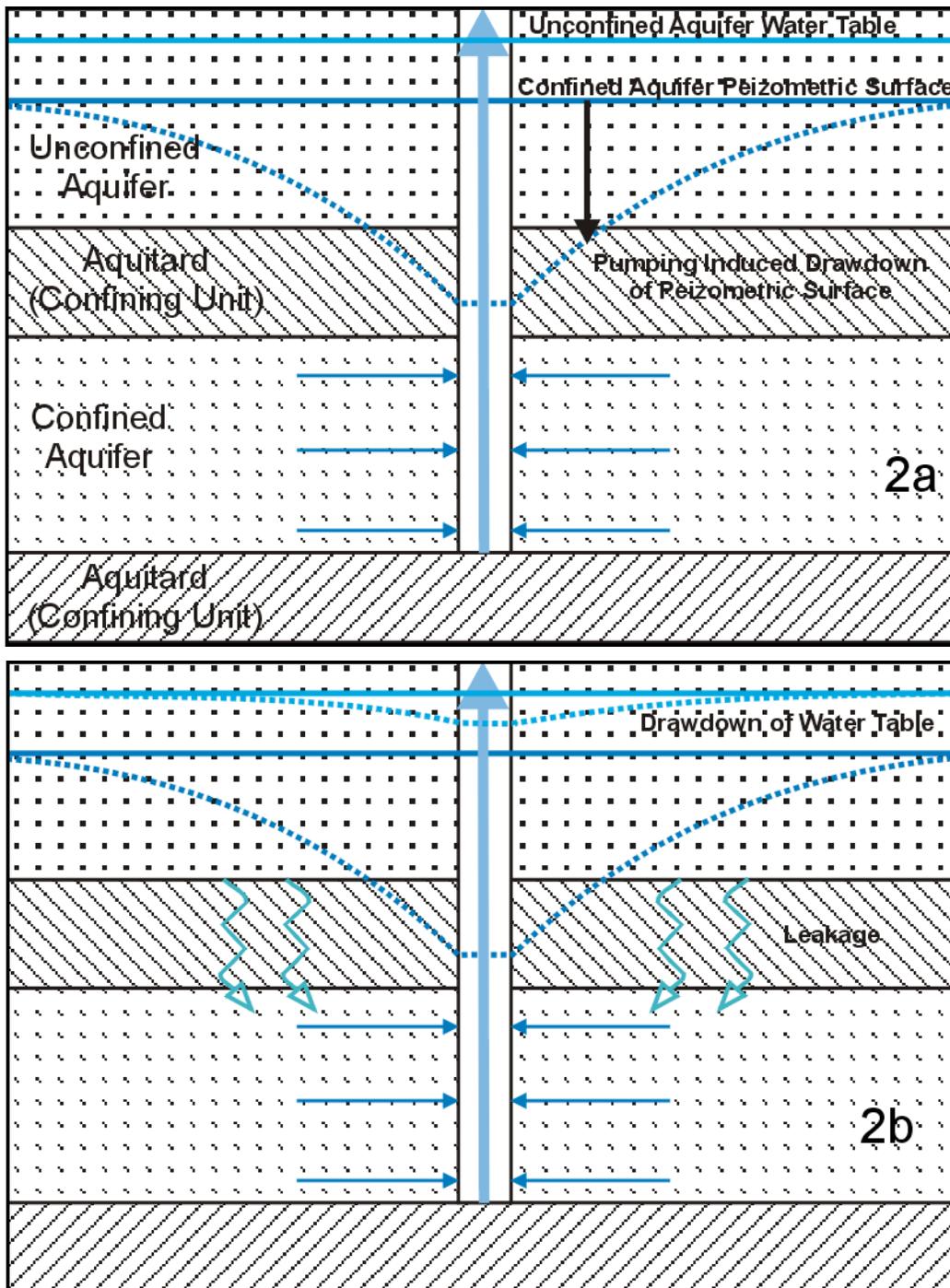


Figure 2: Short-term (2a) and long-term (2b) pumping effects within a leaky aquifer system.

The stratigraphic sequence on Vashon Island, as described above, is not consolidated or compacted to a degree where aquitards form an effective barrier to groundwater flow between aquifers. The aquitards on Vashon are typically referred to being “leaky”. Pumping from confined aquifers results in water flowing across leaky aquitards, thus allowing pumping impacts to propagate upward as well as laterally.

The impacts of short-term pumping within a deep confined aquifer in a leaky system are generally restricted to fluctuations of the piezometric surface of the deep aquifer (Figure 2a). Over the long term (Figure 2b), a portion of the water produced from the deep confined aquifer is replaced through leakage across aquitards and intervening units that separate the producing deep aquifer with the shallow water table aquifer and any surface water bodies with which it is in hydraulic connection. The remaining quantities produced from the deep confined aquifer that is not drawn down from shallower sources are compensated through reductions in discharge from the deep aquifer. On Vashon Island the deep aquifer discharges into Puget Sound.

Impairment Considerations

Consideration of impairment for a change to an existing ground water right involves the examination of the potential differences in impacts that arise from withdrawing water after the change has been implemented. In the

present case, this includes analysis of potential pumping impacts at the new point of withdrawal on water rights within an estimate radius of influence of well pumping of one-half mile and of the possibility that pumping may impact the ability of streams to maintain minimum flows established by rule or administrative order.

There are no surface water bodies on Vashon Island for which minimum flows have been established. Judd Creek located approximately 1 mile east of the proposed well location is closed to appropriation under WAC 173-151, but minimum flows were not set through that rule. Stream flows on Vashon Island are therefore not afforded protection from impairment as are water rights. They are however investigated as part of the analysis of public interest and water availability.

Four claims to vested water rights, held by two individuals, are located within a one-half mile radius of the proposed new point of withdrawal for G1-23519C (Table 4; Figure 3). No other water rights claims are found within a one-half mile radius of the proposed new point of withdrawal. Please take note that Ecology makes no assessment here of the validity of claims to vested rights. Such authority is within the exclusive jurisdiction of the courts per RCW 90.03 (the Water Code).

Well logs on file with Ecology indicate that the Nethercutt well and other wells associated with exempt withdrawals (RCW 90.44.050) are completed in the shallower Qva or Qvr aquifers, which are separated from the production aquifer by at least one clay dominated confining unit.

Water Right #	WR Type	Purpose of Use	Last Name	First Name
G1-069983CL	Claim S	Single Domestic	BEAUMONT	HAL J.
G1-069984CL	Claim S	Irrigation	BEAUMONT	HAL J.
S1-160735CL	Claim L	Domestic & Stockwatering	NETHERCUTT	PAUL L
G1-160736CL	Claim L	Domestic & Stockwatering	NETHERCUTT	PAUL L

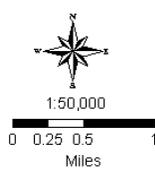
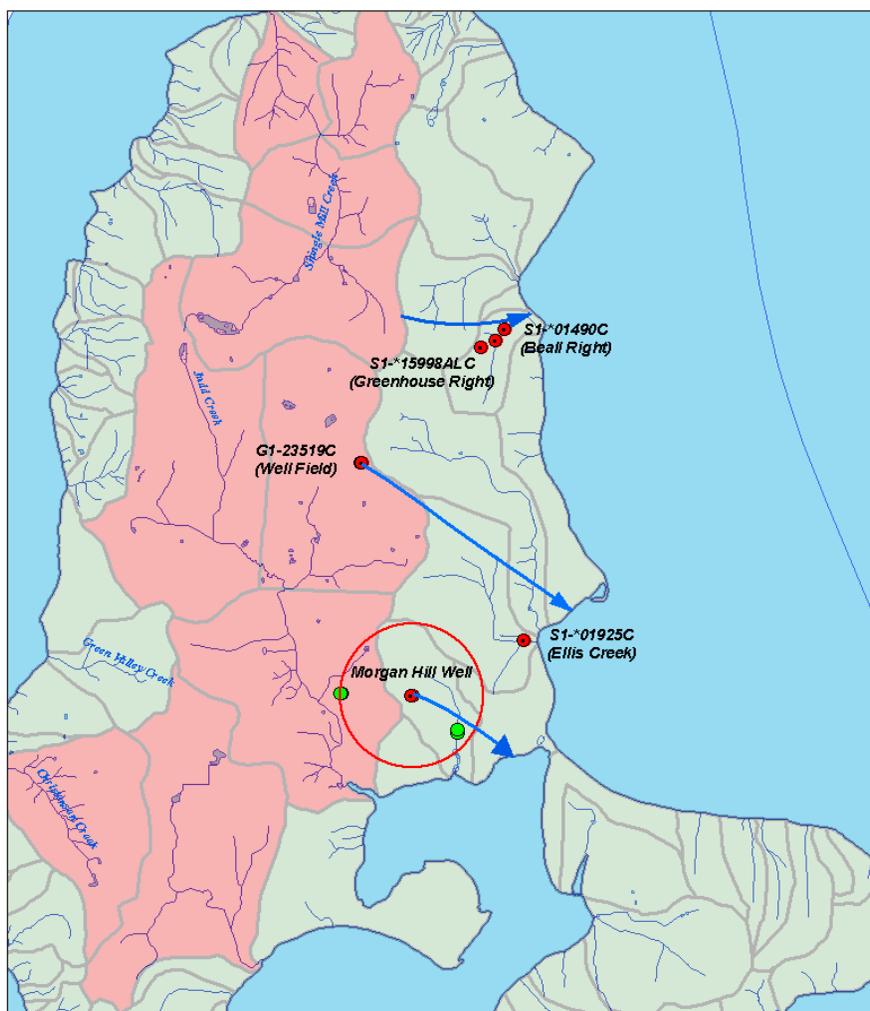
Although pumping from the deeper aquifers will likely have a small impact on shallower aquifers and streams, it is highly unlikely that these impacts will be large enough to prevent the full exercise of other water rights in the area surrounding the Morgan Hill Well site.

During testing of the Morgan Hill Well, there were no reports of impacts from shallow well owners in the area. In his 2008 hydrogeological report for WD 19, Eric Weber of Landau Associates identified some 12 private wells lying within an approximate 1-mile radius of the Morgan Hill Well. He states in the report that none of these wells are within the 10-year zone of influence (722 feet) calculated using the fixed radius method.

Public Interest Considerations

The public’s interest in water rights decisions can be viewed as a balance of competing interests in how water is beneficially used. The two principal interests at stake here are preserving groundwater levels in a finite aquifer and providing water supplies to serve existing and future homes and businesses within the WD 19 service area.

With a few exceptions, wells monitored on Vashon/Maury Island show a stable aquifer system where aquifer static water levels fluctuate in response to variations in rainfall (Ferguson, 2008). Shallow aquifers exhibit more water level variability than deeper ones. The variability of water levels in the shallower aquifers is consistent with their role as a medium for shorter-term seasonal to multi-year storage of precipitation and as the source of flows for streams and springs throughout the island.



King County Water District No. 19
Change Application CG1-23519C
Surface Basins and Groundwater Flow



April, 2009

Figure 3: Surface and Groundwater flow and setting of Morgan Hill Well.

There are no perennial streams or springs in the immediate vicinity of the Morgan Hill Well so pumping is not expected to have a measurable impact to stream flows, particularly in the late summer months when intermittent streams are dry.

Since the well is completed at a depth of 363 feet in a leaky confined aquifer, pumping from the well is likely to have a wider impact than a similar withdrawal from a shallow well. Pumping impacts from the deep aquifer at the Morgan Hill site would also be decreased due to it being distributed over a larger area. Of interest to this discussion is that the impact would extend westward to encompass a portion of the Judd Creek sub-basin, which is closed to appropriation under WAC 173-515, the instream flow rule for the Kitsap Basin (WRIA 15). If this application were for a new water right, Ecology would be obliged to either deny the application on the basis of lack of availability or for being contrary to the public interest as expressed through the closure.

Since the application is for a change to an existing water right where the point of withdrawal is within the Judd Creek sub-basin and the new point of withdrawal outside of the sub-basin, it is expected that total impacts to the flows of Judd Creek would be diminished as a result of the change.

Another important consideration necessary for evaluation of public interest is that approval of this application will allow greater certainty for WD 19 in fulfilling its duty to serve water to current and future residents of Vashon and Maury Islands within the district's boundaries.

The district's water rights portfolio has a total allocation of 1,058 gpm and 1,369 afy. Under ideal circumstances these quantities would be able to supply a community with over 6,000 connections averaging 250 gallons per day each of water consumption. The WD 19 system is limited however by reliance for much of the allocated quantities (1,014 of 1,369 afy) on surface water sources that have proven to be susceptible to variations in seasonal flow and precipitation, and is also vulnerable to, if not already affected by, loss of groundwater recharge in the more urbanized part of Vashon Island that overlies a significant portion of the Beall Creek watershed.

The district's surface water rights on Beall and Ellis Creeks are some of the oldest on Vashon Island, dating from the later 1800's for the Beall Greenhouse right and from the 1920's for Beall Creek and Ellis Creek rights.

Much of the recent growth on Vashon Island has been accommodated by the drilling of wells in the shallower Qvr (Recessional) and Qva (Vashon) aquifers. This includes over 80 new private wells completed within WD 19 service area boundaries since 1990.

Consideration of Protests and Comments

No protests or comments were filed during or after the 30 day public notice period for this application.

CONCLUSIONS

The proposed change will not result in impairment of existing water rights. Water is available at the proposed new well location and the proposed change will not prove detrimental to the public interest. The proposed purpose of use, municipal supply, is deemed to be beneficial and the new well will tap the same body of public groundwater. The proposed change therefore complies with the requirements for an amendment to a groundwater right as required under RCW 90.44.100 and may be approved.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that the request for change to G1-23519C be approved in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2, et seq.

Uncertainty about the fate of unperfected quantities in G1-23519C resulting from the Lummi Tribe et al. vs. PCHB litigation can be minimized by rescinding the certificate back to permit stage and instituting a development schedule to allow full perfection of the 300 afy originally allocated.

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:

Certificate G1-23519AC

- 250 gpm, including a maximum of 35 gpm from the Morgan Hill Well (Well 3)*
- 222 afy, including a maximum of 45 afy from the Morgan Hill Well (Well 3)**
- Municipal Supply, Continuously

Permit G1-23519BP

- 250 gpm, including a maximum of 35 gpm from the Morgan Hill Well (Well 3)*
- 78 afy, including a maximum of 45 afy from the Morgan Hill Well (Well 3)**
- Municipal Supply, Continuously

* Qi from both G1-23519AC and G1-23519BP may not exceed a cumulative rate of 250 gpm.

** Qa from both G1-23519AC and G1-23519BP may not exceed a cumulative rate of 300 afy.

Points of Withdrawal (G1-23519AC & G1-23519BP)

- SW1/4, SE1/4, Section 31, Township 23 N., Range 03 E., W.M. (Well 1)
- SW1/4, SE1/4, Section 31, Township 23 N., Range 03 E., W.M. (Well 2)
- SW1/4, SE1/4, Section 31, Township 23 N., Range 03 E., W.M. (Well 4)
- NW1/4, SW1/4, Section 8, Township 22 N., Range 03 E., W.M. (Well 3/Morgan Hill)

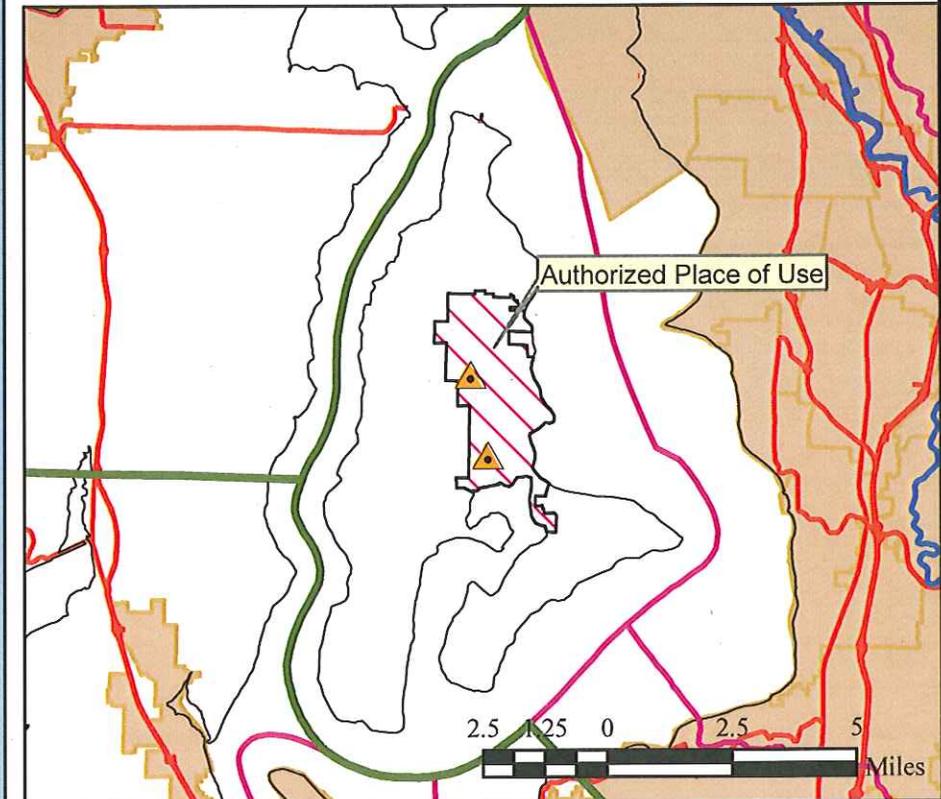
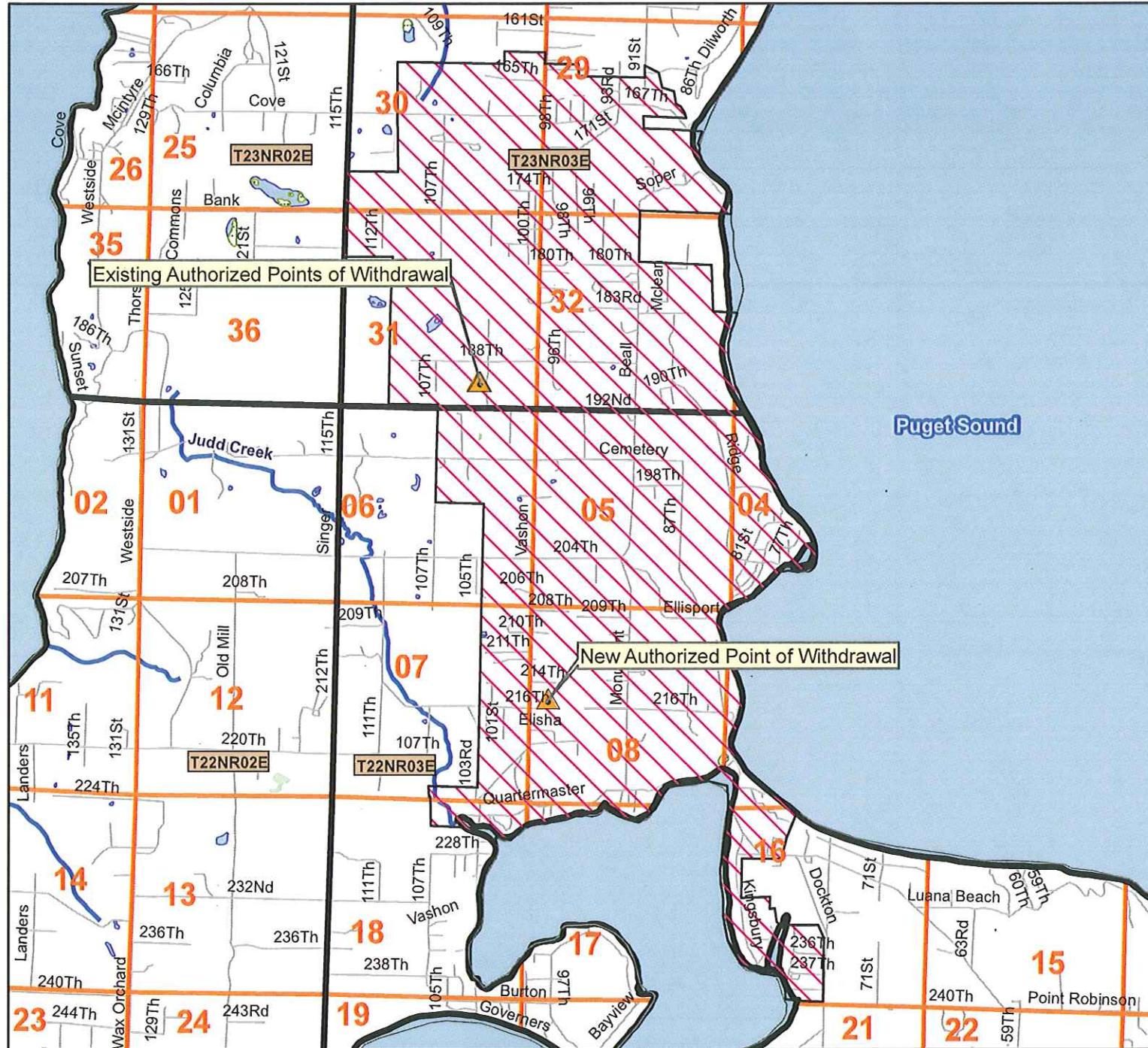
Place of Use (G1-23519AC & G1-23519BP)

As described on Page 1 of this Report of Examination.

Report by: _____ Date _____
 Douglas H. Wood, LHG
 Water Resources Program

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King County Water District 19
 Change to Certificate G1-23519C
 Sec. 8 & Sec. 31, T 23N, R 03E., W.M.
 WRIA 15 - King County



Attachement 1

Legend

- County
- WRIA
- cities
- Local Roads
- Townships
- Sections
- Parcels
- 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.'

