STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION FOR CHANGE TO GROUNDWATER RIGHT

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	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
August 26, 1974	G1-22050A	G1-22050P	G1-22050C

NAME
City of Bremerton Municipal Water Utility

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
3027 Olympus Drive	Bremerton	Washington	98310

PUBLIC WATERS TO BE APPROPRIATED

SOURCES
Bremerton Well 22 and Domsea Well 2

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
	33.6 Consumptive (Br. Well 22) 134.5 Non-consumptive (D. Well 2)	54.2 Consumptive 217.0 Non-consumptive

QUANTITY, TYPE OF USE, PERIOD OF USE

Municipal Supply Purposes - Continuously

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL

800 feet North and 1,000 feet East of the SW corner of Section 32, Township 24 North, Range 1 East, W.M. (Well 22)
750 feet North and 850 feet East of the West 1/4 Corner of Section 32, Township 24 North, Range 1 East, W.M. (Domsea Well 2)

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW1/4 of the NW1/4	32	24	1E	15	Kitsap

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The place of use (POU) of this water right is the service area described in the most recent Water System Plan approved by the Washington State Department of Health, so long as the City of Bremerton 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.

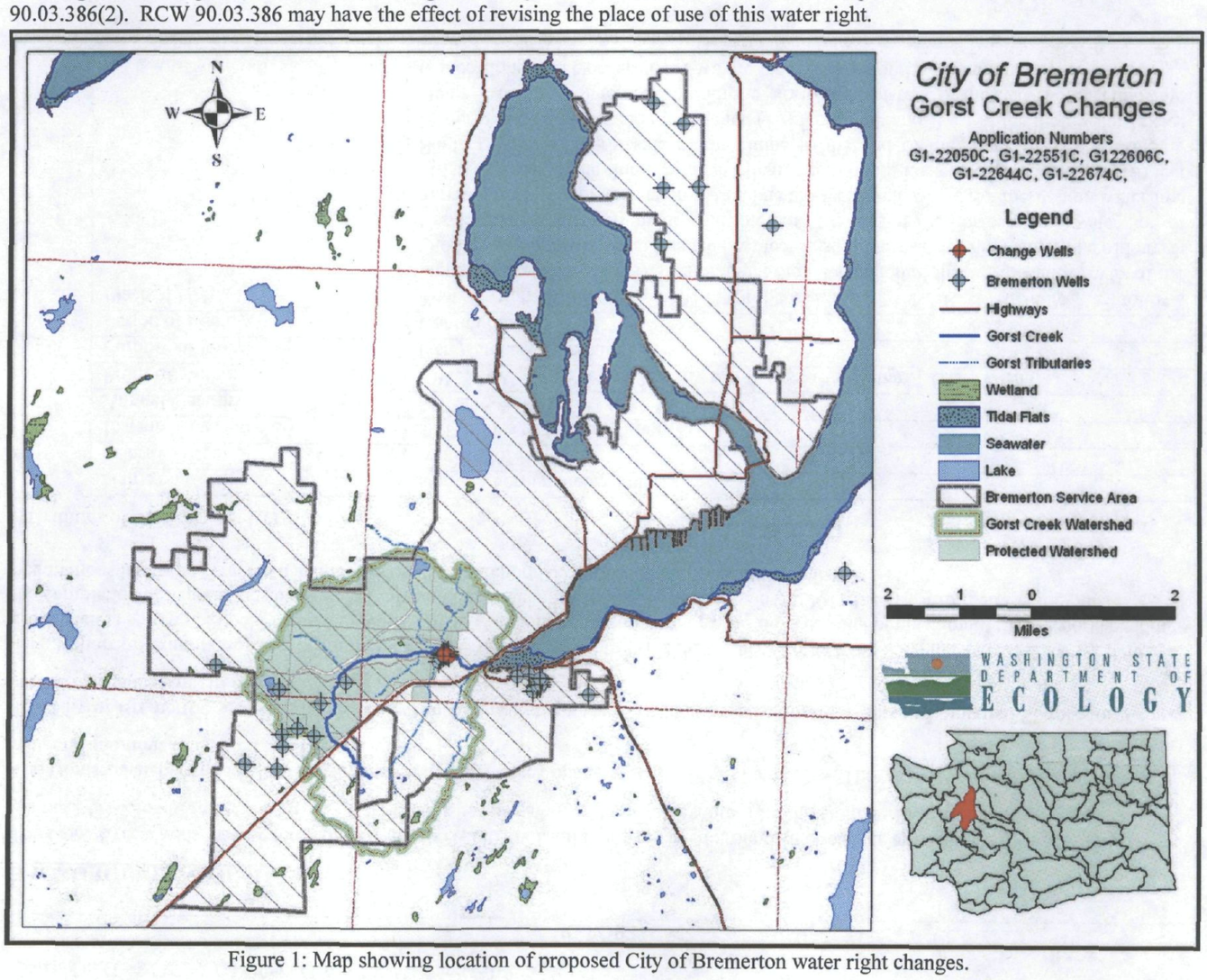


Figure 1: Map showing location of proposed City of Bremerton water right changes.

DESCRIPTION OF PROPOSED WORKS

The City of Bremerton water system intends to replace the five Gorst Creek wells formerly serving the Domsea Farms Inc. fish hatchery operation with a new well capable of producing 233.5 gallons per minute (gpm) available through this change to G1-22050C and associated changes to G1-22551C, G1-22606C, G1-22644C, and G1-22674C.

REPORT

BACKGROUND INFORMATION

The Gorst Creek wells that are the subject of this (G1-22050C) and four associated groundwater change applications (G1-22551C, G1-22606C, G1-22644C, and G1-22674C) were established as pathogen-free water sources for the Domsea Inc. fish hatchery.

The Domsea hatchery and fish rearing operation at Gorst Creek operated between 1974 and 1989. The system operated utilizing five wells with one additional well used as a backup source.

The City of Bremerton seeks to change the purpose of use and place of use for these five water rights to Municipal Supply for the area served by the City of Bremerton.

This Report of Examination and accompanying reports for changes to G1-22551C, G1-22606C, G1-22644C, and G1-22674C were completed in spring of 2006. Pursuant to request by the City of Bremerton, Ecology has delayed final publication of these reports pending the completion of negotiations between the city and the Suquamish Indian Tribe. On June 22, 2011 the city informed Ecology that negotiations had been completed and requested that the reports be published and decisions finalized.

Attributes of the Original Certificate

Name on Certificate:	Domsea Farms, Incorporated
Priority Date:	August 26, 1974
Instantaneous Quantity:	220 gallons per minute (gpm)
Annual Quantity:	350 acre-feet per year (afy)
Point of Withdrawal:	SW ¼ NW ¼ of Section 32, Township 24 North, Range 1 East, W.M.
Purpose of Use:	Fish Hatchery Operations
Period of Use:	Continuously
Place of Use:	That Portion of the S ½ NW ¼ of Sec. 32, T. 24 N, R. 1 E, W.M., as follows (approximately 10.4 acres): Beginning at the intersection of the North right-of-way of the Old Belfair Highway and a line ten (10) feet East of the Easterly high water line of Parrish Creek; thence Northerly along said line ten (10) east of the Easterly high water line of Parrish Creek to an intersection with a line ten feet South of the Southerly high water line of Heins Creek to the flume structure; thence continuing Easterly along a line ten (10) feet South of the Southerly side of the flume to the end of the flume; thence continuing Easterly and Southerly along a line ten (10) feet South and West of the high water line of Heins Creek to an intersection with the North right-of-way of the Old Belfair Highway; thence along said North right-of-way to the true point of the beginning.

Proposed Change

Name of Applicant:	City of Bremerton Municipal Water Utility
Date of Application for Change:	July 8, 1992
Point of Withdrawal:	SW ¼ NW ¼ of Section 32, Township 24 North, Range 1 East, W.M.
Purpose of Use:	Municipal Supply
Period of Use:	Continuously
Place of Use:	Areas Served by the City of Bremerton Water Utility
Notice of Publication:	The Sun - October 2nd and 9th, 1992
Protests:	None

INVESTIGATION

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

- The State Water Code
- Existing water rights on file for City of Bremerton Water Utility Water System
- Records of other water rights in the vicinity
- Notes from site visit on November 22, 2001.
- Correspondence and conferences with the City of Bremerton Water Utilities, Washington Department of Fish and Wildlife and the Suquamish Indian Tribe.
- Topographic, GIS and local area maps
- The City of Bremerton Water System Plan (1999)
- Technical Reports on the hydrogeology of the Gorst Creek Basin and on the subject wells prepared for the City of Bremerton by Robinson and Noble, Inc. and by AGI Technologies, Inc.

State Water Code

Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describe the process for obtaining water rights including the process to amend or change existing rights. Laws specifically governing the water right permitting process are RCW 90.03.250 through 90.03.340 and RCW 90.44.060. Changes or amendments to rights are covered under RCW 90.03.380 and RCW 90.44.100.

Existing Rights for the City of Bremerton Water System

The City of Bremerton water system consists of water rights certificates, permits, and claims to vested rights totaling 11 certificates for groundwater rights, 6 claims for vested groundwater rights, 3 certificates for surface water rights, 3 claims to vested surface water rights, and 2 reservoir rights (see tables 1 and 2). With the exception of the five groundwater certificates that are the subject of this (G1-22050C) and accompanying (G1-22551C, G1-22606C, G1-22644C, and G1-22674C) change applications, the City's water rights serve municipal purposes as defined in RCW 90.03.015.

The total quantities available under Bremerton's municipal groundwater rights are 14,114 afy at a combined rate of 10,470 gpm. The City's surface water rights total 65 cubic feet per second (cfs) which, assuming water is physically available, can produce a maximum annual quantity of 23,141 acre-feet. City's two reservoir certificates authorize 5,200 acre-feet of surface water storage.

Table 1a: Bremerton Groundwater Rights

File#	Priority	Purposes†	Qi (gpm)	Qa (afy)	TRS	QQ	Q
G1-*05570C	15-Apr-1960	MU	450	700	T24N-R01E-S33	NE	SW
G1-22932C	11-Aug-1977	DM	600	960	T24N-R01E-S33	NE	SW
G1-22933C	11-Aug-1977	DM	280	448	T25N-R01E-S22	NE	SE
G1-23367C	11-Apr-1979	DM	680	1,088	T25N-R01E-S34	NE	SE
G1-23718C	05-Dec-1980	MU	500	800	T25N-R01E-S34	SE	NE
G1-23787C	06-Mar-1981	IR	130	75	T23N-R01W-S01		
G1-23939C	10-Sep-1981	MU	650	1,040	T24N-R01W-S36	SE	SE
G1-24772C	19-Dec-1985	MU	300	338	T24N-R01W-S36	SE	SE
G1-25280C	25-Jul-1988	MU	600	677	T24N-R01W-S35	SE	SE
G1-25797C	02-Aug-1990	MU	1,150	1,300	T24N-R01W-S35	SE	SE
G1-25800C	02-Aug-1990	MU	300	338	T24N-R01W-S36	SE	SW
G1-116700CL	01-Oct-1944	MU	600	700	T24N-R01E-S33	NW	SE
G1-116701CL	01-Jan-1944	MU	800	1,000	T24N-R01E-S33	NW	SE
G1-116702CL	01-Jun-1944	MU	500	650	T24N-R01E-S33	SW	SE
G1-116703CL	01-Jul-1943	MU	1,200	1,500	T24N-R01E-S33	NW	SE
G1-116704CL	01-Sep-1941	MU	1,200	1,500	T24N-R01E-S33	NW	SE
G1-116705CL	01-Oct-1940	MU	800	1,000	T24N-R01E-S33	NW	SE

†MU = Municipal Supply; DM = Multiple Domestic; IR = Irrigation

Table 1b: Bremerton Surface Water Rights

File#	Priority	Purposes†	Qi (cfs)	Qa (afy)	TRS	QQ	Q
R1-*04178C	25-Nov-1935	MU	-	1,200	T24N-R01W-S35	SE	SE
R1-*13553ABHC	12-Aug-1955	MU	-	4,000	T24N-R01W-S26		SW
S1-*02598C	22-May-1929	MU	5	3,614*	T24N-R01W-S35	NW	SW
S1-*02599C	22-May-1929	MU	10	7,227*	T24N-R01W-S34	SW	NE
S1-*13552BHC	12-Aug-1955	MU	25	4,000	T24N-R01W-S34	SW	NE
S1-116706CL	01-Jun-1902	MU	2	300	T24N-R01E-S21	SE	SW
S1-116707CL	01-Jun-1911	MU	15	5,000	T24N-R01E-S32	SW	NW
S1-116708CL	01-Aug-1903	MU	8	3,000	T24N-R01E-S33	NW	SE

†MU = Municipal Supply

Table 1c: Bremerton Water Rights Summary

Source	Qi	Qa (afy)
Groundwater	10,740 gpm	14,114
Surface Water	65 cfs	23,141

Table 2: Domsea Groundwater Rights (as per certificate)

File#	Priority	Purposes†	Qi (gpm)	Qa (afy)	TRS	QQ	Q
G1-22050C	26-Aug-1974	FS	220	350	T24N-R01E-S32	SW	NW
G1-22551C	15-Jul-1975	FS	350	448	T24N-R01E-S32	SW	NW
G1-22606C	30-Oct-1975	FS	325	448	T24N-R01E-S32	SW	NW
G1-22644C	11-Feb-1976	FS	350	448	T24N-R01E-S32	SW	NW
G1-22674C	12-Apr-1976	FS	325	448	T24N-R01E-S32	SW	NW

†FS = Fish Propagation

Table 2a: Domsea Water Rights Summary

Source	Qi (gpm)	Qa (afy)
Groundwater	1,570	2,142

Legislative changes to Chapters 90.03 and 90.44 RCW in 2003 clarified the disposition of water rights held by municipal suppliers such as the City of Bremerton. Under these statutory changes all of the water rights held by Bremerton are considered to have been issued for municipal supply purposes if they were originally issued to the city for municipal purpose or were acquired from another municipal water supplier to whom they issued for a municipal purpose as defined under RCW 90.03.015.

The water rights that are the subject of this (CG1-22050C) and accompanying applications for change (CG1-22551C, CG1-22606C, CG1-22644C, and CG1-22674C) were issued to Domsea Farms, Inc. for fish propagation purposes. Domsea Farms operated as a for-profit corporation and as such was not a municipal supplier as defined under RCW 90.03.015.

In cases where a municipal supplier acquires a water right that did not originally serve a municipal supply purpose the municipal supplier is required to request a change in purpose of use under RCW 90.03.380 for surface water rights or under RCW 90.44.100 for groundwater rights before that right can be used to serve municipal purposes.

Other Water Rights in the Vicinity

In addition to the City of Bremerton there are no other large purveyors operating within the Gorst Creek alluvial aquifer. The area to the south of the valley is served in part by the Sunnyslope Water District as well by several small Group A and Group B systems. None of the wells for these is within a one mile radius of the proposed point of withdrawal that is intended to produce the water utilized under the water right that is the subject of this investigation.

A minimum instream flow has been established under Chapter 173-515 WAC for Gorst Creek effective July 24, 1981. A minimum instream flow is treated as a water right with a priority date of the effective date of the rule. The instream flow rule is junior to all five of the Domsea Farms water rights which have priority dates of between 1974 and 1976.

Site Visit

The site of the Domsea well field was visited by this writer during the course of a November 22, 2001 field examination. None of the original Domsea wells was being operated and appear to have been welded closed since Domsea ceased operations at the site.

Correspondence Received

Mr. Steve Boessow, a water resources biologist with the Washington State Department of Fish and Wildlife, was informed by Ecology of the subject application in November 2001. Mr. Boessow responded in a letter dated March 7, 2002, which states that Gorst Creek is inhabited by coho, chum and chinook salmon, by steelhead trout, and by other species of game fish. The City of Bremerton informs Ecology that Chinook are non-native to Gorst Creek and are present as a result of fish hatchery escapement. The hatchery is located on the former site of the Domsea operation and is currently managed cooperatively by the City of Bremerton, The Suquamish Tribe, and the Washington Department of Fish and Wildlife.

Mr. Boessow recommends that land within the watershed be protected by placing one acre in trust for each 1 gpm (0.02 cfs) that is withdrawn from Gorst Creek through the five changes proposed. He has further recommended that any additional consumptive use of surface water from Gorst Creek that occurs through the proposed changes be compensated through measures which will mitigate for reduced stream flows.

The City of Bremerton currently holds title to in excess of 3,000 acres within the boundaries of the Gorst Creek watershed, which covers approximately 6,134 acres, thus approximately half of the Gorst Creek watershed is currently protected (Figure 1). This exceeds the 233.5 acres Mr. Boessow recommends by ten times.

In addition to protecting watershed lands, the City of Bremerton in 2001 completed a half-million dollar stream restoration project on the lower portion of Gorst Creek adjacent to the hatchery site which replaced a 750 foot concrete stream segment with a 1,000 foot channelized gravel stream segment with woody debris and riparian plantings along the banks.

Melody Allen of the Suquamish Tribe was provided a draft copy of the Report of Examination for Change to G1-22050C, which contains substantially the same information as the Reports of Examination for changes to G1-22551C, G1-22606C, G1-22644C, and G1-22674C. Ms. Allen raises two issues in her letter dated March 15, 2006. The first concerns relinquishment and the date of last water use under the Domsea water rights and the second issue concerns whether Ecology should condition use of the proposed new point of with withdrawal (Well 22) to minimum instream flows established under Chapter 173-515 WAC.

Ecology believes that a portion, but not all, of the right has relinquished due to non-use. The remainder (1,200 gpm used continuously), remained available for transfer under the right, but only 233.5 gpm of this can be applied to the proposed change to municipal purpose within the Bremerton service area. Ecology bases this decision on the water remaining in use until 1989 at 1,200 gpm continuously and the city filing its application for transfer and change in 1992. This is a three year period of non-use. In addition Domsea transferred the right to the city in 1989. The city therefore believes it has grounds to assert that since that time the right has been claimed for municipal supply purposes and is exempt from relinquishment. Ecology does not choose to either accept or dispute the city's claim at this time.

Under WAC 173-515-070 water rights senior to promulgation of the rule are categorically exempt from the provisions of Chapter 173-515 WAC, including minimum instream flows. Ecology may impose provisions as part of a change decision, but does not typically apply a provision, such as making a withdrawal interruptible, when the impacts resulting from a change are less than those which existed under the original right.

Topographic and Local Area Maps

Topographic, geologic and GIS thematic maps were used by the author as aids in determining the hydrogeological character of the Gorst Creek Basin. GIS maps were created using ArcGIS software. Other maps created by the City's current consultants, Robinson and Noble, Inc. and former consultants AGI Technologies, Inc. were examined in the course of the investigation. Location maps included within this report were created by the author using GIS data supplied by Kitsap County or from Ecology's spatial database.

City of Bremerton Water System Plan (1999)

The Bremerton Water System Plan provides an overview of the physical infrastructure and of growth planning for the city. It was used primarily as a reference source.

AGI, Inc. (1997)

The AGI Gorst Basin study provides a detailed description of the surface and groundwater hydrology of the Gorst Creek Valley and surrounding areas within the Gorst Creek watershed. The conceptual model and analytical elements developed in this study provides the basis of the understanding of the Gorst Creek hydrological and hydrogeological systems that is presented in this report.

Robinson and Noble, Inc (2003, 2004)

Robinson and Noble, Inc. produced an analytical model of the area in order to determine the interaction between the Domsea well field and flows of Gorst Creek. The results of the model were used to help determine the potential impact of withdrawals from the Domsea and Bremerton Gorst Creek wells on surface water flows. These modeled impacts were used to determine the quantities associated with the Domsea withdrawals that were derived through the interception of base flows destined to contribute to flow in Gorst Creek.

Modeled impacts on Gorst Creek base flows for production from the City's Gorst Creek Production Well (Well 22) were used in this report to gauge the potential impacts of withdrawals on Gorst Creek flows.

FINDINGS

In accordance with state law, the following considerations must be addressed during the process of evaluating this change request:

- Will the change result in an enlargement of the original right?
- Will the change result in impairment to other existing water rights?
- Will the public interest be negatively impacted?
- Is the new purpose of use considered a beneficial use of water?

Potential for Enlargement

The City of Bremerton is currently pursuing this application for change to certificate G1-22050C and four other groundwater rights (G1-22551C, G1-22606C, G1-22644C, and G1-22674C) in Gorst Creek basin. The combined annual quantity (Qa) certificated under these rights is 2,142 acre-feet per year with a combined instantaneous rate (Qi) of 1,570 gpm.

Under RCW 90.03.380, RCW 90.14.180, and RCW 90.44.100 Ecology looks at beneficial use and relinquishment to make tentative determination regarding the quantity of water available for transfer and change to a water right. Under these standards the maximum beneficial use, less quantities of water allocated under the certificate which were not beneficially used for a period exceeding five years are available for change.

The City of Bremerton supplied a statement dated September 28, 2005, signed by Mr. Mike Wastel, former manager of the Domsea hatchery from 1980 to 1991, in which he states that the five water rights provided a combined total of 1,850 gpm, an amount that exceeds the total Qi of the five certificates under consideration of 1,570 gpm. Mr. Wastel further stated that by 1982 the wells had declined such that they were capable of producing no more than 1,200 gpm.

Mr. Wastel, in a telephone interview with Ecology conducted on October 24, 2005, said that during the last four to five years of hatchery operations the rate of groundwater production was 1,200 gpm from four to five production wells and using one or two back-up wells. In addition Mr. Wastel confirmed that the wells were rehabilitated in the mid 1980's, but did not provide the production capacity after that work was completed. Given Mr. Wastels's statement that capacities were still near the 1,200 gpm level during the last four to five years of operation (until 1989), it can be assumed that recovery attempts did not appreciably improve capacity.

It is therefore determined that although the full Qi of 1,570 gpm for all five Domsea water rights was likely put to beneficial use, that amounts in excess of 1,200 gpm have relinquished to the state through non-use for a period exceeding five years.

Additional consideration of enlargement requires looking into not only beneficial use, but also the nature of the allocation which provided water for beneficial use. The original purpose of use for the Domsea groundwater rights was fish propagation. Once the water was circulated through the fish rearing tanks it was discharged into Gorst Creek with minimal quantities lost through evaporation and leakage.

Water from the Domsea wells was withdrawn from the alluvial aquifer which is in close hydraulic connection with Gorst Creek. The degree of hydraulic connection was sufficiently high that approximately 80% of water withdrawn from the wells was diverted from the base flows of Gorst Creek (Robinson and Noble, 2005). Water which is discharged back to the source from which it was derived is considered to be non-consumptive. The remaining, approximately 20%, portion of the Domsea beneficial use represented a depletion of the groundwater source and can therefore be considered consumptive use with respect to the aquifer source.

The Washington Supreme Court in the case of Schuh v. Ecology (100 Wn.2d 180, 667 P.2d 64) found that *"To determine whether the water right will be enlarged by [a] change, we must first determine the scope of that right prior to the proposed change"*. In the case of the Domsea water rights, the scope includes references in the water rights files that these rights were issued with full knowledge that only a portion of the allocation would be considered consumptive with respect to source. Therefore a change in use could only include the consumptive portion of the right. To do otherwise would result in an enlargement of the right.

Table 3 provides an analysis of the quantities under the five Domsea water rights which is available for transfer for each groundwater source.

Table 3: Calculated Transferable Quantities

Well	Certificate	Priority	Source %[†]	Qi_O[*]	Qa_O	Qi_A	Qa_A	Qi_C	Qa_C	Qi_N	Qa_N
Domsea 2	G1-22050C	26-Aug-74	0.80	220	350	168.2	271.2	**33.6**	**54.2**	**134.5**	**217.0**
Domsea 3	G1-22551C	15-Jul-75	0.79	350	448	267.5	431.5	**56.2**	**90.6**	**211.3**	**340.9**
Domsea 4	G1-22644C	11-Feb-76	0.76	350	448	267.5	431.5	**64.2**	**103.6**	**203.3**	**327.9**
Domsea 5	G1-22606C	30-Oct-75	0.83	325	448	248.4	400.7	**42.2**	**68.1**	**206.2**	**332.6**
Domsea 6	G1-22674C	12-Apr-76	0.85	325	448	248.4	400.7	**37.3**	**60.1**	**211.1**	**340.6**
Total				**1570**	**2142**	**1200**	**1935.6**	**233.5**	**376.6**	**966.5**	**1559.0**

[†] Surface water percentage of Qi (remainder is groundwater which equates with consumptive use)

[*] Qi_O/Qa_O=Original certificated quantities; Qa_A=Quantity adjusted to 1,200/1570 ratio of beneficial use; Qi_C/Qa_C=Consumptive portion based on GW component; Qi_N/Qa_N=Non-Consumptive portion based on SW component.

It is tentatively determined based on the above information that the quantities under all five Domsea groundwater rights available for transfer is 1,200 gpm and 1935.6 afy of which the consumptive portion, 233.5 gpm and 376.6 afy, may be applied to a consumptive use. The amount of consumptive use available for change under G1-22050C is 33.6 gpm and 54.2 afy. The remaining quantities under G1-22050C which remain available for non-consumptive uses are 134.5 gpm and 217 afy.

Impairment of Other Rights

Within the 17 sections that comprise most of the Gorst Creek watershed Ecology records document 159 water rights. Forty-nine of the 100 are certificated rights (25 for surface and 24 for groundwater) and the remainder claims to vested water rights. Six of these 159 are for surface water where Gorst Creek is listed as the source (one certificate and five claims).

Within a radius of approximately one mile of the proposed new point of withdrawal there are 35 water records – 10 surface water certificates, 6 long form (quantified) surface water claims, 4 long form groundwater claims, 10 short form (un-quantified) surface water claims, and 5 short form groundwater claims. A one mile radius surrounding Well 22 is deemed sufficient for evaluating impairment potential to other groundwater rights due the high transmissivity of the alluvial aquifer and a pumping rate of 1,200 gpm. The city's consultants, Robinson and Noble, Inc. (1993), estimate the transmissivity of the alluvial aquifer to be between 50,000 and 100,000 gpd/ft, which in an unconfined aquifer would not likely produce a measurable drawn-down beyond a distance of one mile.

The sum total quantities of all the certificated surface water rights within the 1 mile radius of the Gorst Production Well (Well 22) amounts to 0.45 cfs, which could, if used continuously, produce about 300 acre-feet per year. However, the records indicate these were issued for private lots with single homes irrigating at most approximately 25 acres. This would typically require only about 60 acre-feet per year for these purposes.

Only one of the 25 surface water certificates had a database entry that indicated it utilized Gorst Creek as its source. An examination of the file, however, reveals that the actual source is a small parallel creek located about ¼ mile east of Gorst Creek.

The only large surface water right found that uses Gorst Creek as a source is Claim S1-116707CL which was filed by the City of Bremerton to record its vested (pre-1917) diversion located approximately ¼ mile west of the proposed new point of withdrawal.

The Sunnyslope Water System controls three water rights with wells located in the upland area near the headwaters of Gorst Creek. These rights, G1-*04777C (GWC 6132), G1-*02414C (GWC 2403), and G1-24383C have a combined Qi of 530 gpm and a Qa of 280 afy. These wells are located some two miles southwest of the proposed point of withdrawal and completed in an up-gradient tributary aquifer. There is not likely to be any potential for impairment of these rights, nor is there any record of these rights being impacted during the time Domsea operated the hatchery.

All other significant surface and groundwater rights in the Gorst Creek Basin are held by the City of Bremerton. Only the Gorst surface water diversion would likely face any potential for impairment from the withdrawals associated with the proposed changes. The City has indicated that they are not concerned over any potential impacts to their own water rights. Bremerton's Gorst Creek diversion is maintained as a drought back-up source and was last used in 1985. It is located upstream to the west, across the stream from the Gorst Production Well.

The Gorst Creek minimum instream flow adopted through Chapter 173-515 WAC represents a surface water right established in July 1981. All five of the Domsea water rights were issued prior to the adoption of the instream flow right for Gorst Creek and therefore the consumptive groundwater portion of these rights are exempt from the instream flow requirements under WAC 173-515-070.

The impact of pumping 1,200 gpm from the five Domsea wells based on the 2004 Robinson and Noble Model is that approximately 80% of the withdrawal is derived from stream baseflows (966.5 gpm). This amount plus the groundwater portion was discharged into Gorst Creek when the Domsea hatchery was in operation. Under the proposed change the consumptive portion of the 1,200 gpm will be withdrawn from Well 22, while the non-consumptive portion may be withdrawn from either Well 22 or from the five original Domsea Wells. The impact at Well 22, based on the 2003 model, is that approximate 75% of withdrawals are derived from Gorst Creek baseflows. Assuming that only the historic consumptive portion is withdrawn from the new well, this will result in a difference in impact to Gorst Creek flows of approximately -16 gpm. If the new point of withdrawal is not considered, i.e. the original wells were used, there would be no change in impacts due to pumping.

Table 4: Comparison of Calculated Impacts†

Pre-Change Impacts				
	Qi	**Qa**	**Qi_{SW}**	**Qi_{GW}**
Domsea Wells	1200	1935.6	**966.5**	**233.5**
Post-Change Impacts				
	Qi	**Qa**	**Qi_{SW}**	**Qi_{GW}**
Well 22	233.5	376.6	172.3	61.2
Domsea Wells	966.5	1559	778.0	188.5
		Total	**950.4**	**249.6**
		Change	**-16.1**	**+16.1**

† based on Robinson and Noble 2003 and 2004 analytical models

The difference in impacts to Gorst Creek due to the proposed change are that a lesser amount of the total 1,200 gpm shall be derived from baseflows by withdrawing 233.5 gpm from the new Well 22, and that the consumptive groundwater portion of the 1,200 gpm will no longer be discharged to the creek. While the addition of the consumptive groundwater component into the creek might be considered beneficial to stream flow, the loss through the change cannot be considered an impairment of the right represented by the minimum instream flow adopted under WAC 173-515-030 since it does not represent a natural stream flow component. Additionally, while non-use of the non-consumptive portion of the right might lead to a difference in physical impacts to Gorst Creek, Ecology does not view non-use of a water right as impairment.

Based on the above analysis it is determined that approval of the proposed transfer of 1,200 gpm and the change in purpose and place for the amounts previously put to consumptive use will not result in the impairment of existing water rights.

Public Interest

The impacts of the proposed changes to G1-22050C and four other groundwater rights (G1-22551C, G1-22606C, G1-22644C, and G1-22674C) to the Public Interest must be evaluated as part of this investigation. Two aspects of the proposed changes raise public interest questions. These are the potential impacts of the proposed changes to hydrological integrity of Gorst Creek and the potential improvements that these changes bring to the ability of Bremerton to provide reliable and clean water to the community.

The public interest as per RCW 90.54.020 (3) is expressed as follows:

"The quality of the natural environment shall be protected and, where possible, enhanced as follows:

(a) Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values. Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served."

Approval of the request to transfer only the consumptive quantities previously put to beneficial use would not be in conflict with RCW 90.54.020(3). Allowing the transfer of non-consumptive portions of the original right would result in a depletion of water within the creek and would thus be in conflict with the purpose of chapter 173-515 WAC and with RCW 90.54.020.

Providing clean, reliable public water supplies are deemed to be beneficial and are encouraged under RCW 90.54.020 in subsections (1), (5), and (8).

It is determined that approval of the applicant's request to transfer all beneficially used quantities under G1-22050C to uses that include consumptive purposes outside of the Gorst Creek watershed cannot be approved because this would be contrary to the public interest.

However, approval of a change to those quantities which are consumptive with respect to the groundwater source and continued use of non-consumptive quantities within the Gorst Creek Basin would not prove detrimental to the public interest.

Protests

No protests were received during the thirty-day period following publication of the proposed changes in October 1992. The Suquamish Tribe in a letter dated March 15, 2006 expressed concerns about the potential for impairment and relinquishment. These concerns are addressed above in the correspondence section of this report.

Source of Groundwater

The proposed new point of withdrawal, Well 22, is situated within the Gorst Creek Basin approximately 4 miles southwest of the Bremerton City Center. The well site is underlain by fluvial sands and gravels deposited during the last 14,000 years by the retreating glaciers and by later reworking of this material by Gorst Creek (Figure 2).

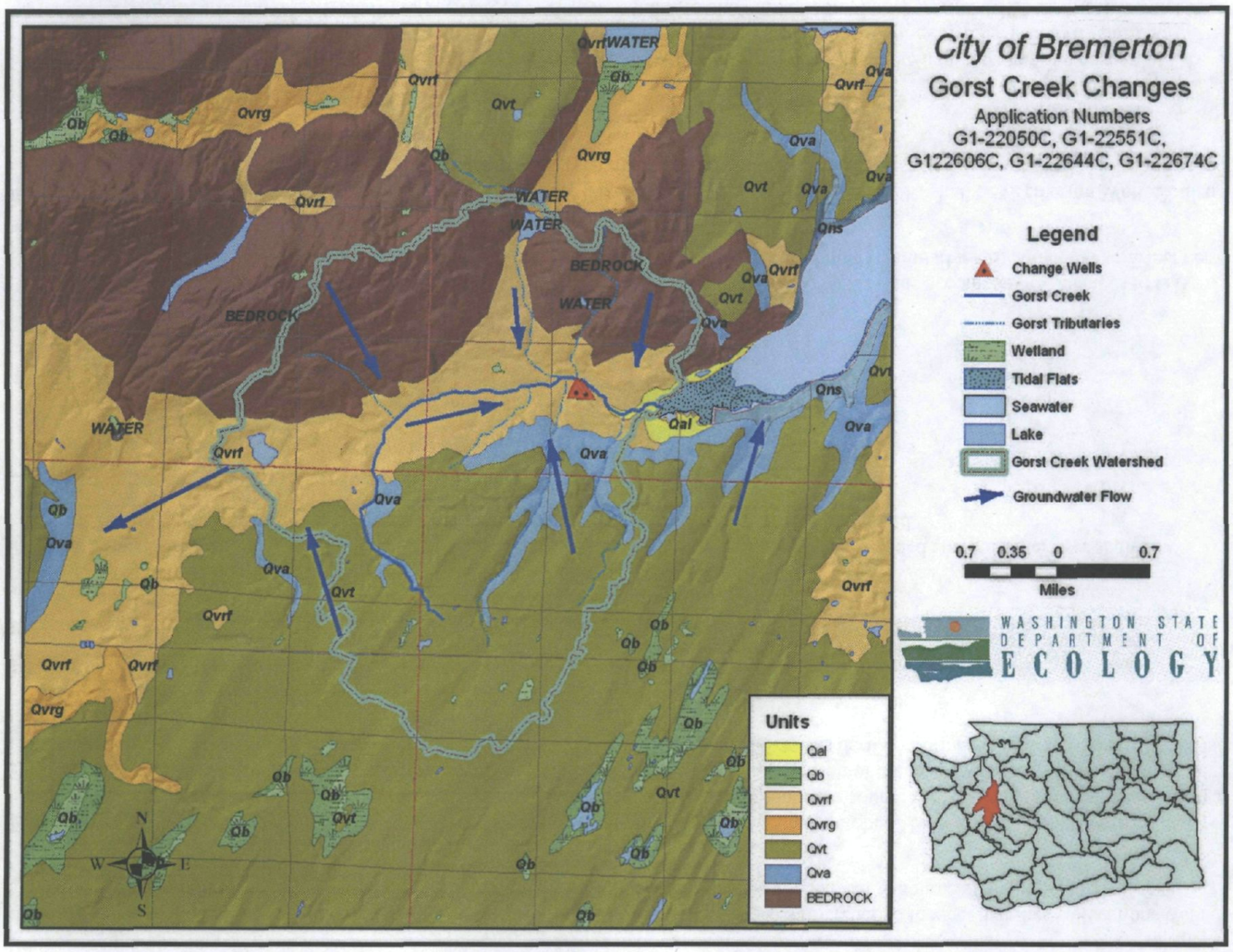


Figure 2: Generalized hydrogeological map of the Gorst Creek Basin.

Table 5: Surficial Geological Units (Figure 2)		
Unit	**Description**	**Age**
Qal	Fluvial sand, gravel, and silt	12,000 years to present
Qb	Wetland/bog deposits	12,000 years to present
Qvrf	Vashon Recessional Outwash – sand/silt	14,000 to 12,000 years
Qvrg	Vashon Recessional Outwash - gravel	14,000 to 12,000 years
Qvt	Vashon Till	17,000 to 14,000 years
Qva	Vashon Advance Outwash	22,000 to 17,000 years
Qns	Pre-Vashon non-glacial sediments	40,000 to 100,000 years
Bedrock	Basalt and sandstone	Millions

The source of water for the original Domsea wells and for the proposed new point of withdrawal is the same, namely groundwater hosted within glaciofluvial sands deposited by the retreating Puget Lobe of the Cordilleran Ice Sheet. The aquifer is recharged from three sources – directly from precipitation falling on areas underlain by the Vashon Recessional Outwash, via the Vashon Advance Outwash located beneath the upland areas to the south, and via shallow groundwater flow from the bedrock uplands north of the Gorst Creek Valley. The Sea Level Aquifer, not exposed in the area shown in Figure 2, may contribute to groundwater flows within the lower reaches of the Gorst Creek basin.

Water Availability at the New Point of Withdrawal

The proposed new point of withdrawal is situated within the same general area of the original Domsea wells. The availability of the consumptive portion of the water right was established as part of the investigation completed prior to the issuance of the original permit and certificate.

Beneficial Use

Under RCW 90.54.020, municipal supply is listed as a beneficial use of water, thus satisfying this requirement for a transfer or change to a groundwater right.

DISCUSSION

A key factor in the approval of only the consumptive portion of the Domsea groundwater rights for consumptive municipal supply purposes is an appreciation of the impacts that groundwater withdrawals have on nearby surface water bodies. In the case of the Domsea Wells the conceptual and analytical studies of the surface and groundwater hydrology of the Gorst Creek watershed have provided a high level of confidence that transfer of non-consumptive quantities would lead to reduced flows in Gorst Creek that could therefore have a negative impact on the minimum instream flow established under Chapter 173-515 WAC.

An additional important consideration in approving only the consumptive portion of the Domsea rights for municipal supply purposes is the prohibition against transferring or changing quantities that would result in enlargement of a water right. While this prohibition is specifically referenced under RCW 90.44.100 when adding additional points of withdrawal for a groundwater right, case law in Washington State has expanded the enlargement consideration to what the Supreme Court in the 1983 Schuh Case (100 Wn.2d 180, 667 P.2d 64) referred to as the "scope" of the water right.

Water Resource Program Policy on transfers involving non-consumptive water rights is of long standing and is referenced as early as the late 1970's in a Standard Operating Policy (SOP) document dated February 17, 1977. This policy categorically states that no change may be granted which would convert a non-consumptive use to a consumptive use. The rationale is not stated in this 1977 policy, but this prohibition is listed along with other enlargement criteria such as increases in Qi and Qa.

An earlier reference contained in a 1968 Attorney General's Opinion (AGO 1968-008) makes it clear that even at that time the Department of Conservation (Ecology's predecessor agency) treated non-consumptive water rights as a special type of water right that had no impact on water availability since there was no diminishment of the source, and therefore could be approved even if a stream was fully appropriated. The timing of this opinion implies that at the time that the Domsea water rights were processed in the mid to late 1970's, the differences in scope between consumptive and non-consumptive water rights were well established, and that therefore transfers and changes involving the conversion of a non-consumptive right to one that is consumptive would likely have been understood as constituting an enlargement of the right.

It should be noted that all five original reports of examination for the Domsea rights makes reference to the fact that these allocations were approved for a non-consumptive use and that all or a portion of the water would be discharged back to source of supply, namely Gorst Creek.

Ecology's existing policy on consumptive use is Water Resource Program Policy 1020 dated October 31, 1991. This policy clarifies that consumption is related to the diminishment of source rather than to the purpose of use. Since the source is in close hydraulic connection to a surface water body and since the water was originally then discharged to surface water, a portion of the water withdrawn is deemed consumptive to the groundwater body from which it was withdrawn and the portion which was derived from the capture of surface water is deemed to be non-consumptive.

RECOMMENDATIONS

I recommend the request for change to G1-22050C be approved, subject to the provisions listed below:

Provisions

1. The amount of water approved for transfer and change is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required.
2. Quantities available under this change application to G1-22050 are conditioned as follows:

    *a. **Consumptive:***

    33.6 gallons per minute (Qi) and 54.2 acre-feet (Qa)

    *b. **Non-Consumptive:***

    134.5 gallons per minute (Qi) and 217.0 acre-feet (Qa)

3. The cumulative total of consumptive quantities approved through this change to G1-22050C and the accompanying changes to G1-22551C, G1-22606C, G1-22644C, and G1-22674C shall not exceed 233.5 gallons per minute (cumulative Qi) and 376.6 acre-feet per year (cumulative Qa).
4. A new point of withdrawal approved through this change for the consumptive portion of G1-22050C shall be Bremerton Well 22, also referenced as the Gorst Production well and which is located within the SW ¼ of the NW ¼ of Section 32, Township 24 North, Range 1 East, W.M.
5. The remaining, non-consumptive, portion of G1-22050C shall be withdrawn from Domsea Well 2.

    a. The City of Bremerton may combine the non-consumptive portion of G1-22050C with the non-consumptive portion of G1-22551C, G1-22606C, G1-22644C, and G1-22674C in one or combination of existing Domsea wells. For certificates not specifically authorized in any well or wells, the city shall submit a showing of compliance form for that certificate so that the water right file will correctly record which well or wells is used. All Domsea wells that are no longer needed for non-consumptive use production shall be decommissioned in accordance with the requirements of RCW 18.104 and WAC 173-160.

6. The purpose of use for the approved change to G1-22050C shall be Municipal Supply and the period of use shall remain continuous.

    a. The consumptive portion above may be used for consumptive or non-consumptive municipal supply purposes as defined under RCW 90.03.015.

    b. The non-consumptive portion of G1-22050C as quantified in Provision 2b shall only be used for non-consumptive purposes within the Gorst Creek watershed and quantities shall be returned to the creek.

7. Place of Use:

    a. The place of use (POU) of the consumptive portion of Groundwater Certificate G1-22050C as described in Provision 2a shall be the service area described in the most recent Water System Plan approved by the Washington State Department

of Health, so long as City of Bremerton 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.

If the criteria in RCW 90.03.386(2) are not met and a Water System Plan 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 has been approved after September 9, 2003, the place of use reverts to the last place of use described by Ecology in a water right authorization.

b. The place of use (POU) for the non-consumptive portion of Groundwater Certificate G1-22050C shall be restricted to those areas described in Provision 7a which are contained within the boundaries of the Gorst Creek watershed and where beneficially used quantities can be returned to Gorst Creek.

8. Metering Requirements:

   a. An approved measuring device shall be installed and maintained for each diversion/withdrawal of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC, including future additional or replacement wells constructed under the authority of RCW 90.44.100.

   b. Water use data shall be recorded weekly. Data shall be maintained by the property owner and promptly submitted to Ecology upon request. Recording and retention of data by the water right holder are required to inform the water users about how much water is used, when the water is used and to assist users in efficient water management.

   c. Chapter 173-173 WAC describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition 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".

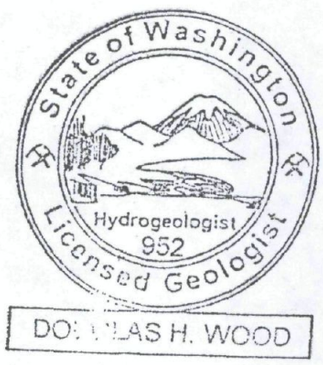
   d. Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

9. Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air-line and gauge may be installed in addition to the access port.

10. If it can be shown that the requested change has a detrimental effect on existing rights, it shall be the responsibility of the operator to mitigate for this impact and/or alter or cease withdrawal of water.

CONCLUSIONS

In accordance with chapters 90.03 and 90.44 RCW, I conclude that Groundwater Certificate G1-22050C is in good standing and is eligible for change. I have determined that the change to Groundwater Certificate G1-22050C will not enlarge the right conveyed by the original certificate and the water use will be beneficial. Approval of this change request will not result in the impairment of existing rights or be detrimental to the public interest. Based on these conclusions, this change request should be approved subject to existing rights and the above-indicated provisions and a superseding certificate should be issued.

REPORT BY: Douglas H. Wood DATE: August 17, 2011

Douglas H. Wood, M.S., LHG (WA lic. No. 952)